614.0994
N479r
1915

1916.

LEGISLATIVE ASSEMBLY.

NEW SOUTH WALES.

REPORT

OF THE

DIRECTOR-GENERAL OF PUBLIC HEALTH,

NEW SOUTH WALES,

FOR THE YEAR ENDED 31ST DECEMBER,

1915.

Ordered by the Legislative Assembly to be printed, 7 November, 1916.

SYDNEY: WILLIAM APPLEGATE GULLICK, GOVERNMENT PRINTER.

1916.

*69685 *233—a [8s. 6d.]

This book has been DIGITIZED
and is available ONLINE.

THE UNIVERSITY
OF ILLINOIS
LIBRARY
614.0994
N479r
1915

Digitized by the Internet Archive
in 2014

https://archive.org/details/reportofdirector1915news

1916.

LEGISLATIVE ASSEMBLY.

NEW SOUTH WALES.

UNIVERSITY OF ILLINOIS LIBRARY
FEB 1 0 1917

REPORT

OF THE

DIRECTOR-GENERAL OF PUBLIC HEALTH,

NEW SOUTH WALES,

FOR THE YEAR ENDED 31ST DECEMBER,

1915.

Ordered by the Legislative Assembly to be printed, 7 November, 1916.

SYDNEY: WILLIAM APPLEGATE GULLICK, GOVERNMENT PRINTER.

1916.

*69685 *233—a [8s. 6d.]

614.0944
N47d
1915

Offices of the Director-General of Public Health, 93 Macquarie-street, Sydney.

Branches and Institutions controlled by the Director-General of Public Health:—

Executive and Clerical Staffs.

Epidemic and Sanitary Inspectorial Branches.

Microbiological Laboratory.

Chemical Laboratory.

Pure Food Branch.

Dairies Supervision and Cattle Slaughtering Branches.

Meat Export Branch.

Hospital Admission Depôt, and Ambulance Service and Disinfecting Station, Woolloomooloo Bay.

State Hospitals and Asylums, Convalescent Homes, and Sanatoria, including:—

Coast Hospital for General and Infectious Cases.

Leper Lazaret.

David Berry (General) Hospital.

Lady Edeline Hospital for Babies, "Greycliffe," Vaucluse.

Strickland Convalescent Home for Women, "Carrara," Rose Bay.

Denistone Convalescent Home for Men, Eastwood.

Waterfall Sanatorium for Consumptives.

Rookwood State Hospital and Asylum (Men).

Liverpool State Hospital and Asylum (Men).

Newington State Hospital and Asylum (Women).

Parramatta Homes:—

(*a*) Macquarie-street Asylum for the Blind, and for Men suffering from defective sight and senility.

(*b*) George-street Asylum for Aged and Infirm Men.

(*c*) Cottage Homes for Aged Couples.

1915 cont.
Dir. G.
21322
489101

Board of Health.

Paton, Robert Thomson, M.D., Brux. ...	Director-General of Public Health.
Fosbery, The Hon. Edmund Walcot, C.M.G., M.L.C.	Member, Board of Health.
Mackellar, The Hon. Sir Charles Kinnaird, K.C.M.G., M.B., C.M.	Do do
Stuart, Sir Thomas Peter Anderson, Kt., M.D.	Do do
Robinson, Augustus Frederick	Do do
Foreman, Joseph, M.R.C.S. (Eng.)	Do do
Purser, Cecil, M.B., Ch.M.	Do do
Chairman, Chamber of Commerce (The Hon. F. E. Winchcombe, M.L.C.).—Succeeded in August by G. A. Parkes, Esq.	Do do (*ex officio*).
The Rt. Hon. the Lord Mayor (R.W. Richards)	Do do (*ex officio*).
Flynn, Emanuel John	Do do

Head Office Staff.

Paton, Robert Thomson, M.D., Brux.	Director-General of Public Health.
Armstrong, William George, M.B., D.P.H.	Senior Medical Officer of Health.
Suckling, Frank Martin, M.B., Ch.M.	Assistant Medical Officer to the Government.
Chapple, Alexander Tennant, M.B., Ch.M.	Do do do
Palmer, Arthur Aubrey, M.B., Ch.M.	First Government Medical Officer for Sydney.
Cahill, Arthur Charles, M.B.... ...	Second do do
Neely, Thomas Henry	Secretary.
Potter, James Julius	Chief Clerk.
Thornthwaite, Ernest John	Accountant.
Lake, Alfred	Inspector of State Hospitals and Asylums.
Tompkins, Henry James	Clerk.
Ranshaw, John James	Do
Creagh, Stephen Thomas	Do
Alexander, Cecil Eustace	Do
Tunks, Arthur Malcolm	Do
Boyle, John James Valentine ...	Do (on Active Service).
Carroll, Frederick Launcelot	Do
Gordon, William James	Do (on Active Service).
Stark, Marlon Roxburgh Varley ...	Do
Willcock, Mabel	Shorthand-writer and Typist.
Sparks, Lessie Florence	Do do
Pattle, Jessie Ethel	Do do
Thompson, Gladys May	Junior Clerk.
Gillam, Walter	Do
Carrick, Herbert Thomas James ...	Attendant.
Roberts, Virgil	Do
Heyward, Daniel Frazer	Do
Cummins, Rupert Emmett	Messenger.
McElhinney, James	Night Officer (on Active Service)

CONTENTS.

Report of the Director-General of Public Health.

PAGE.

Letter of Presentation 1

Part I.—Public Health Administration.

Chemical Laboratory: Report of the Government Analyst 28

Pure Food Act, 1908: Report of Chief Inspector 31

Veterinary Branch and Dairies Supervision Act: Report of Chief Veterinary Inspector ... 42

Meat Export Branch: Report of Veterinary Inspector in Charge 46

Report of Chief Sanitary Inspector 51

Private Hospitals Act 55

Infectious Diseases notified during 1915 66

Hospital Admission Depôt, Ambulance Service, and Disinfecting Station, Woolloomooloo Bay 76

Summary of Quarterly Returns from Local Authorities shewing action taken by them under the Public Health Act, 1902, during 1915 78

Return showing the number of permits issued for exhumation of bodies and of burials in closed cemeteries for the years 1906 to 1915 inclusive 80

Part II.

Metropolitan Combined Sanitary Districts: Report of the Acting Medical Officer of Health... 81

Hunter River Combined Sanitary Districts: Do do do ... 98

Part III.

Further Report on an Outbreak of Mild Smallpox in New South Wales, and the measures taken for its control 123

Part IV.

Report upon the State Hospitals, &c., under the control of the Director-General of Public Health

1. Coast Hospital, Little Bay: Report of the Medical Superintendent 128
2. Leprosy in New South Wales: Twenty-fifth Annual Report 142
3. David Berry Hospital 153
4. Lady Edeline Hospital for Babies, "Greyeliffe," Vaueluse 158
5. Strickland Convalescent Home for Women, "Carrara," Rose Bay 162
6. Convalescent Hospital for Men, "Denistone House," Eastwood 163
7. State Sanatorium for Consumptives, Waterfall: Report of the Medical Superintendent 164
8. Rookwood State Hospital and Asylum for Men, Lidcombe 168
9. State Hospitals and Asylums for Men, Liverpool 173
10. State Hospital and Asylums for Women, Newington 177
11. State Asylum for Aged and Infirm Men, George-street, Parramatta 182
12. State Asylum for the Blind, and for Men suffering from Defective Sight and Senility, Macquarie-street, Parramatta 183
13. Cottage Homes for Aged Couples, Parramatta 185
14. Statistical Tables: State Hospitals and Asylums 186

Part V.

Sixth Report of the Microbiological Laboratory ... ... — — — 191

Report of the Director-General of Public Health to the Honorable George Black, M.L.A., Chief Secretary and Minister of Public Health.

Sir,

I have the honor to present herewith my Report for the year 1915.

Public Health Acts.

From the public health aspect the year 1915 is a notable one, due to the placing on the Statute Book of the Public Health (Amendment) Act, 1915. This is the greatest step forward in public health work since the passing of the Public Health Act, 1896, and the Pure Food Act of 1908. The new Act is of prime importance for it confers upon the Board of Health very many of the powers for improving and safeguarding the public health which the Board has from time to time discovered it lacked under the previously existing Acts.

The amended Act makes further provision for preserving the public health, and in particular for regulating sanitation and preventing the spread of tuberculosis, smallpox, plague, cholera, and other diseases; and it applies the provisions of the Acts relating to Public Health and Pure Food, &c., to the Crown and public departments.

An important feature of the Act is the power it confers upon the Board of Health to require the Councils of Municipal and Shire areas to do certain specified acts in relation to the following matters among others:—

1. Keeping premises free from offensive or unwholesome matter, and the suppression of nuisances arising therefrom.
2. Regulating the storage, sale, conveyance, disposal, and the delivery of meat, fish, oysters, and crustaceæ.
3. Regulating cattle intended for slaughter and regulating abattoirs and slaughter-houses.
4. Sewerage and drainage.
5. The removal of nightsoil, filth, refuse, and garbage, and the destruction of garbage.
6. The construction and situation of privies, the regulation of the degree of closet accommodation.
7. Public urinals, closets, and lavatories.
8. The sanitary requirements of public baths, dressing sheds, and dressing rooms.
9. The regulation and control of common lodging-houses and seaman's boarding-houses.
10. The establishment, control, maintenance, and regulation of infants' milk depôts.
11. The regulation of the interment of the dead.

Should a Council fail to carry out such requirements the Board has the power to do or cause such acts to be done; to demand payment by the Council of any expenses incurred thereby; and on a Council failing to make payment, to recover such expenses from it.

Regulations, ordinances, and by-laws relating to any of the matters mentioned in the above schedule must be submitted to the Board, and be approved by it before they can be enforced; and the Board can make suggestions to the Minister for the alteration of or addition to any existing by-laws which are considered by it unsuitable

or

or inadequate for preserving the public health. This power also extends to the city of Sydney, as Section 6 of the Act provides that "the Board may require the Council of the City of Sydney to exercise its power to make, amend, and repeal by-laws" relating to any of the foregoing matters, and if the Council neglects for three months to comply with such requirement the Governor may exercise such power on the recommendation of the Board.

Other important powers conferred by the new Act are those concerning Factories and Shops. Section 7 provides that where the Board of Health is of opinion that any regulations in force under the Factories and Shops Act, 1912—

1. Prescribing the cubical spaces and the amount of ventilation for each person, and to prevent overcrowding,
2. Prescribing the dimensions of dressing-rooms,
3. Regulating closet accommodation,
4. Prescribing separate closet accommodation for the sexes,
5. Regulating the supply of drinking water,
6. Regulating the furnishing of accommodation for washing, &c,

are unsuitable or inadequate for preserving the public health, it shall report to the Minister any alterations or additions or any new regulations it considers desirable.

Licensed Premises.—Power is conferred on the Board's sanitary officers to inspect at any time premises of licensed publicans as defined in the Liquor Act, 1912, and if any of the sanitary conveniences or appliances used in connection with such premises are in an insanitary condition, to require publicans to take steps to put the premises in a sanitary condition. Any failure to place premises in a sanitary condition is to be brought to the notice of the licensing bench and to be considered as an objection to renewal of the license.

The extended powers are greatly appreciated by the Department. For years past the greatest difficulty has been experienced in inducing many country hotelkeepers to provide and maintain sanitary conveniences on their premises in a cleanly manner, and it is anticipated that defective conditions will be remedied at an early date as a result of the wider powers now conferred. A systematic examination of all hotels within the State is being made by inspecting officers, who submit reports on the general condition of each premises. Where necessary, notices are served requiring compliance with the requirements specified by the inspector. It is hoped that the amended Act will operate in such a way that publicans will be unable to secure renewal of license for premises which are not maintained in accordance with a recognised sanitary standard.

In the inspections, attention is given to the construction of the premises from the cellar to the top storey, attention being especially directed to provision of a good water supply, and of adequate and properly constructed lavatory accommodation and sanitary conveniences; to the disposal of waste matters and drainage away from the hotel premises; and to the construction of bedrooms, which are required to have a capacity of not less than 1,000 cubic feet for a single occupant, and 800 cubic feet for every additional occupant, and to be provided with efficient ventilation by means of air-bricks and adequate windows opening to the external air.

Action will also be taken to ensure that any room that has been occupied by a person suffering from consumption or other contagious or infectious disease is thoroughly disinfected or fumigated before being again occupied or let to the travelling public.

In August, 1915, a circular letter was sent to all licensed publicans directing their attention to the amended Public Health Act.

The

The circular contained advice and recommendations for the sanitary construction and maintenance of licensed premises in a clean and wholesome state, and licensees were advised to rectify defects themselves rather than leave them to be enforced by the department and the licensing bench.

Infected Areas.—As stated, one of the objects of the amended Act is to make further provision to prevent the spread of tuberculosis, smallpox, plague, cholera, and other diseases. In this connection a particularly important power is contained in Section 15, which provides that on the appearance of any case of the disease mentioned, or any eruptive fever or sickness which may reasonably be supposed to be such disease, the area within which the case occurred may be declared an "infected area." The Board may then segregate the inhabitants or persons within the area and prevent the ingress to or egress from it of any person, and may isolate or remove to quarantine any contact. This section of the Act was enforced for the first time in connection with the outbreak of smallpox at Kurri Kurri, when the local hospital site was declared an infected area.

Insanitary Buildings.—Greatly increased facilities for obtaining closing orders for buildings unfit for habitation or occupation are given by Section 16 of the Amended Act, which repeals Sections 58 and 59 of the principal Act, and substitutes a much less cumbersome and more speedy procedure.

The amended Act provides that when a medical officer of health, or any authorised officer of the Board or the local authority, certifies to the local authority that a house or other building within its area is unfit or unsafe for human habitation or occupation, the local authority may, by a "closing order," declare it to be unfit, and direct that it shall not be inhabited or occupied after the time specified in the closing order. This amendment of the law is being freely availed of, and considerable improvement in housing conditions has already been effected in the country as well as in the metropolitan district.

Military Requirements.

During the year under review it has appeared to me essential, in view of the critical situation, that assistance required by the military authorities should take precedence over all other work, their needs being considered of supreme importance in relation to all other work of the Department. As the call for volunteers for military service resulted immediately in the concentration at military camps and depôts of large numbers of men from every part of the State, I regarded control of infectious and contagious diseases next in order of importance, and, following these special demands, maintenance at the highest standard possible under the circumstance of the general health administration throughout the State. Progress in other aspects of the general health policy of the Government has been severely handicapped on account of the much depleted staff, and by the need in the present emergency of economy in public expenditure.

Work performed in connection with Military Services.

In connection with war work, this Department has been able to render assistance to the military authorities in many vital matters. Reference was made in my report for 1914 to the assistance which this Department was able to render on the outbreak of war. During 1915 the work was continued, and the Department was able to give assistance in other ways. The Senior Medical Officer of Health (Dr. W. G. Armstrong) was appointed Command Sanitary Officer in the military service for this State, and in that capacity paid regular visits of inspection to the various camps.

Inspections

Inspections of the Newcastle camps were also made by the departmental medical officer stationed in the Hunter River Combined Sanitary District (Dr. J. Booth-Clarkson).

Several inspections have been made also by the sanitary officers of the Department in connection with the disposal of food and other wastes, &c., from the military camps.

Anti-typhoid Inoculation.—Immediately on the outbreak of war in August, 1914, this Department began the preparation of anti-typhoid vaccine for the inoculation of troops leaving Australia. In the first instance vaccine prepared in the microbiological laboratory of the Department was used in all the States of the Commonwealth. The quantity supplied up to the end of 1915 totalled 206,065 cubic centimetres (equivalent to 68,688 doses), and was distributed as shown below:—

Period.	New South Wales.			Queensland.	Victoria.	South Australia	West Australia.	Tasmania.	Egypt.	Total.
	Military Camps, &c.	Transports.	Total.							
1914.—13th August to 31st December.	5,595	23,960	29,555	5,875	8,000	1,920	1,000	1,110	...	47,460
1915.—1st January to 31st December.	50,434	38,211	88,645	44,960	...	...	...	...	25,000	158,605
Total (1914 & 1915)	56,029	62,171	118,200	50,835	8,000	1,920	1,000	1,110	25,000	206,065

The following extract from a report by General Williams is of importance as evidencing the value of the inoculations:—"From the whole of the number of Australian troops landed and trained in Egypt from 4th December, 1914, up to 30th April, 1915, there were only three cases admitted in No. 1 and No. 2 General Hospitals marked 'Enteric fever,' and, from subsequent clinical observations of the medical officers in charge, it could not be actually diagnosed whether these were true cases of enteric or a form of disease simulating the condition. This in itself should speak volumes for the inoculation of troops against enteric fever."

Outbreak of Cerebro-spinal Fever, Liverpool Military Camp.—When an outbreak of cerebro-spinal meningitis occurred at the Liverpool Camp in July, 1915, the Department established a small bacteriological laboratory there. This necessitated a laboratory assistant being stationed at Liverpool, and frequent visits by the Principal Microbiologist; 659 examinations were made at this laboratory for the military authorities.

General Bacteriological Work.—At the departmental laboratory at the head office, a considerable number of general bacteriological examinations were made for the various camps, comprising sputa for tubercle bacilli; blood for malarial parasites; throat swabs for the organism of cerebro-spinal fever; Wassermann tests for syphilis; smears for gonococci, &c. The preparation of curative vaccines, &c., was also undertaken whenever necessary.

Night Recruiting Depôt.—On 3rd August, 1915, a night-recruiting depôt was opened in the Hospital Admission Depôt attached to the Department.

The object of this depôt was to provide a convenient central office for volunteers who were unable to attend the day depôts, or who perhaps could only do so by losing a day's pay. The departmental depôt

depôt was advertised by an electric sign, plainly visible to passengers to the Circular Quay by tram or ferry. At the depôt the comfort and convenience of the recruits was studied in every possible way. Whenever men, otherwise suitable, were found to be suffering from defective teeth, arrangements were made for them to attend the Dental Hospital; and in the case of other remediable physical defects, such as varicose veins, hernia, or similar disabilities, for their admission to one or other of the hospitals under the Department's control.

Between the 3rd August and 31st December, 6,814 persons were examined at this depôt, of whom 5,560 were accepted for military service, and 1,254 rejected.

It was only the loyal co-operation and devotion of my officers which enabled this depôt to be established and successfully carried on. The work necessitated the attendance nightly of from twelve to twenty of my officers, including five or six medical men from the head office staff or the various institutions under my control. All the work performed by my staff at this depôt was wholly voluntary.

Assistance rendered to the Military by State Hospitals and Convalescent Homes.—Before military hospitals could be established accommodation was found in the State hospitals for men requiring treatment. One hundred and fifteen recruits were operated on at the Rookwood State Hospital, and seventy-four at the Coast Hospital. In other ways also the Coast Hospital rendered much assistance by admitting cases of infectious illness from the various camps; such patients included 123 suffering from measles, ten from diphtheria, eight from scarlet fever, and four from chicken-pox. Fifty-one soldiers requiring attention in the general or surgical wards were also treated at the Coast Hospital. These military cases entailed a good deal of heavy ambulance work, as in many instances the ambulances had to be sent to Liverpool and other distant camps for patients.

The Denistone Convalescent Home for men at Eastwood was also utilised in connection with recruits requiring restoration to complete physical health after severe illness or operation, over forty men having gone into camp from there; this is a relatively large number as the Home only contains twenty-five beds.

Food Supplies, &c., and other minor matters in which assistance was rendered by the Department.—At various times during the year forty inspections were made of stores &c., on transports, and 300 samples were collected and submitted for analysis to the Government Analyst.

The Department took action which resulted in the demolition of between thirty and forty dilapidated structures in the town of Liverpool. These premises had been temporarily converted into booths and shops and were a menace to the health of the troops who frequented them.

Meat supplies, and particularly tinned meats, were regularly examined and reported upon by the officer in charge of meat export.

Assistance was rendered also by utilising the laundry equipment of the Liverpool State Hospital. By an arrangement laundry work was carried out for the Camp Hospital at Liverpool and Casula, as well as for the main Liverpool camp on two days each week.

At the Steam Disinfecting Station at Woolloomooloo Bay considerable assistance was rendered by disinfecting or fumigating 15,711 articles consisting of great coats, blankets, sheets, pillows and pillow slips, hammocks, tunics, trousers, mattresses, &c.

On 31st December, 1915, fifty-six members of my staff were absent on military duty, including eight Staff medical officers and

sixteen

sixteen nurses. (Fifteen members of the staff enlisted in 1914). The names of the forty-one officers who ceased civil duty in 1915 are given hereunder :—

Name.	Date Civil Duty ceased.	Name.	Date Civil Duty ceased.
Barr, James William ...	8 January, 1915	Keen, Nurse E. M. ...	31 July 1915
James, Dr. J. A. ...	21 ,, ,,	Williams, Nurse H. ...	31 ,, ,,
Furber, Dr. T. M. ...	21 ,, ,,	Brown, Nurse M. ...	31 ,, ,,
Gough, Frederick J. ...	22 ,, ,,	McLaren, Thos. ...	7 August, ,,
Frizell, Dr. T. J. ...	11 February, ,,	Jaylor, H. B.	8 ,, ,,
Blake, Nurse E. ...	5 April, ,,	Ferguson, Dr. E. W....	21 ,, ,,
Copeman, Nurse E. M....	5 ,, ,,	Perkins, Nurse F. M....	21 ,, ,,
Graham, Nurse E. M. ...	5 ,, ,,	Flynn, J. T.	25 ,, ,,
McKay, Nurse N. B. ...	13 ,, ,,	Dibley, A. D.	1 Sept., ,,
Baxter, Nurse J. M. ...	13 ,, ,,	Piercy, J. H.	6 ,, ,,
Sims, W. M.	20 ,, ,,	Cropley, J. A.... ...	8 ,, ,,
Craig, John Edward ...	26 ,, ,,	Snelling, A. T. ...	11 ,, ,,
Grant, G. G.	12 May, ,,	Allison, W. H. ...	13 ,, ,,
Macintosh, Nurse L. ...	15 ,, ,,	Gordon, W. J. ...	16 ,, ,,
Molloy, J.	16 ,, 1916	Dancy, H. W.	30 ,, ,,
Boyle, J. J. V.... ...	21 ,, 1915	McElhinney, J. ...	30 ,, ,,
Meldrum, Nurse H. M....	11 June, ,,	Longworth, C. C. ...	1 October, ,,
Murphy, J. B.	22 ,, ,,	Beeston, H. B. ...	21 ,, ,,
Walker, L. V.	19 July, ,,	Neary, F. P.	1 Nov., ,,
Cohen, L.	31 ,, ,,	Edwards, A. L. ...	6 ,, ,,
McKern, Nurse G. ...	31 ,, ,,		

INFECTIOUS DISEASES.

Pulmonary Tuberculosis or Consumption.

This disease was responsible for 1,122 deaths during 1915, the average numbers for the years 1910–1914 being 1,210. If due allowance be made for the increase of population the figures for 1915 show a decrease of 7·3 per cent.

Legislative provision for Prevention of Consumption: — Hitherto consumption has not been notifiable in New South Wales (except in the City of Sydney). Under the Public Health (Amendment) Act, 1915, the disease can by proclamation be made notifiable in any part of the State.

A proclamation was issued on 11th August, 1915, making consumption notifiable in the Metropolitan and Hunter River combined sanitary districts, and regulations in regard to such notifications were issued on the same date. The former district includes the whole of Sydney and its suburbs (as far as Hornsby on the north, Parramatta on the west, and Liverpool and Hurstville on the south); the Hunter River combined district embraces Newcastle and the surrounding municipalities, and extends as far west as Singleton. These districts taken together contain approximately half the population of the State.

The reason for the inclusion in the first instance of these districts only is that they contain the most thickly populated districts, and, therefore, those in which there is most tuberculosis; and secondly, that these districts are provided with a medical officer of health who already has the necessary machinery for the administration of the notification clauses of the Act.

When some experience has been gained in the operation of notification of consumption, the advisability of extending the area within which notification must be made to the tourist district of the Blue Mountains, will be considered. This district is largely resorted to

to by consumptives, and early inclusion of it in the notification area appears desirable. It is probable that at no distant date the notification sections of the Act will be extended to the whole State.

Notification of consumption is made by medical practitioners only, and is secret. The notification form is enclosed in an ordinary envelope and sent to the Medical Officer of Health (in any proclaimed district which has no Medical Officer of Health, to the Secretary of the Board of Health). Notifying medical practitioners have the option of deciding whether patients are to be visited by a health officer or not. In the event of his desiring that the notified person shall not be visited, he undertakes to instruct the patient and his friends in the necessary steps for preventing the spread of infection. Other notified cases in the Metropolitan and the Hunter River Districts not supervised by their own medical attendant, are regularly visited by a trained nurse-inspector, who instructs the patient, and his friends, as to what precautions are necessary for safeguarding his own interests as well as those of the people who surround him.

The objects sought to be obtained in visiting notified patients are to instruct them how to treat their sputa and generally conduct themselves so as not to be a danger to the public; to ascertain whether they require any special assistance; and to make inspections of their habitations so as to ascertain if there are any insanitary or unwholesome conditions which require to be remedied.

A record is kept of notified cases, and patients are revisited from time to time to ascertain how they are progressing and if they are complying with instructions.

After the death of a notified person, or after his ascertained removal to other premises, the local authority of the district is informed, in order that disinfection of the house recently occupied may be carried out.

Sanatorium Provision for Treatment of Persons Suffering from Consumption.—The provision at present existing for the treatment of persons suffering from consumption was described in my Report for 1914, and the necessity for providing additional accommodation as a matter of urgency was referred to. As in other health matters, the war has caused delay in giving effect to my recommendations, but the urgent need for it is constantly in view. The question of providing 100 additional beds at Waterfall, and of erecting a hospital of 300 beds for consumptive patients not far distant from the Coast Hospital, is being considered, and action in regard to the matter will in all probability be taken early in 1916.

Waterfall Sanatorium.—At the State Sanatorium at Waterfall 878 patients were under treatment during 1915. Of this number, 315 were in residence on the 1st January and 563 were admitted during the year. During this period 360 patients were discharged and 163 deaths occurred.

The Medical Superintendent (Dr. H. W. Palmer) reports that of the 360 patients discharged, 93 were arrested cases, having no sign of active disease and being able to do a moderate amount of work; 138 were markedly improved, with only slight signs of disease present on discharge, and able to do a medium amount of work. Of the other discharges, 102 patients appeared to have obtained a certain amount of improvement, while 27 left without any apparent benefit.

These results are considered very good, as a number of the cases admitted in 1915 were of a hopeless character. This meant a great increase in the number of bedridden patients, and entailed extra work on the nursing staff.

General

General treatment at Waterfall has been carried on along the same lines as in previous years, very few new methods having been tried. The war, with so many drugs unobtainable, has proved what was not appreciated before, that in the treatment of consumption drugs are of far more importance than had been estimated; it was only when they could not be obtained that their loss and value was fully realised.

Smallpox.

From 1st January to 31st December, 1915, 471 cases of smallpox were recorded in the State. Of these only 41 occurred at Sydney. The number of cases notified in the two previous years was 1,073 (1913) and 628 (1914). Of the 41 cases recorded at Sydney during the current year, twenty-five occurred between 1st January and 25th March. There was no further case in the metropolitan district until August, when a patient who had been infected at Newcastle developed the disease in a Sydney boarding-house. From August 30th to December 31st, 17 cases were reported in Sydney, all of which were connected with Newcastle cases.

The 1915 outbreak was chiefly confined to the Newcastle and Hunter River combined district, from which in all 411 cases were notified. The majority of these cases came from the mining centres. Between February and August there were 68 cases in the Cessnock Shire, principally at Weston and Kurri Kurri; and from there the disease spread to Newcastle, where 279 cases were recorded from August to December. The monthly incidence was August, 25 cases; September, 63; October, 134; November, 95; December, 53. By the end of the year the epidemic was well in hand.

From other country districts 19 cases were notified (Gloucester, 6; Scone, 4; Manning Shire, 3; and Blacktown Shire, 2; one case occurred at four other country towns).

No case of smallpox having been reported for more than three weeks, a special meeting of the Board of Health was held on 7th May, 1915, at which it was decided to make representations to the Government to secure rescission of the proclamation of 21st November, 1914*, and free the State from quarantine restrictions. The restrictions were removed on 18th May, 1915, and have not been reimposed.

Late in the year, when the outbreak in the Newcastle district was at its height, requests were made by the Premiers of Victoria and Queensland for proclamation of Newcastle as an infected area. The Board of Health opposed the request, pointing out that the existing form of the disease was one which should be regarded more as notifiable than quarantinable, as up to that time there had been almost 2,000 cases of smallpox within the State; that no deaths had resulted primarily therefrom; and only in three cases had it been mentioned as a contributing factor; that the Department had taken every precaution to prevent spread of the disease; that all houses where cases occurred were at once quarantined; and that in view of its mild nature the Board was not prepared to recommend compliance with the request, but that every precaution would be taken in order to guard against the disease extending to other States.

Vaccinations.—The number of persons vaccinated during the year by officers of the Department totalled 10,169. The majority of these were house contacts of persons found to be suffering from smallpox in districts where the disease was prevalent, or were vaccinated at public depôts. No information is available as to the number of persons vaccinated by private practitioners.

Leprosy

* This proclamation required all persons travelling to another State to report themselves to the local Board of Health if they became ill within twenty-one days of leaving New South Wales.

Leprosy Act.

In this State lepers have been segregated since 1883, although their detention was not made compulsory by law until 1890. From 1883 to the end of 1915 a total of 137 persons were under treatment; of these, 64 have died; twelve persons, in whom the disease had apparently been arrested, were discharged; and 39 Chinese patients were repatriated. Twenty-two persons remained under treatment at the end of 1915.

The twenty-fifth Report on leprosy in New South Wales, by the Acting Medical Superintendent of the Coast Hospital (Dr. Donald Wallace), will be found on p. 142. It contains clinical notes of the three new cases admitted during the year. There were four deaths at the Lazaret in 1915, and one patient was discharged.

Other Infectious Diseases (p. 66).

Other infectious diseases notifiable under the Public Health Act, 1902, are:—

Scarlet Fever	Notifiable on and from 1st January, 1898.		
Typhoid Fever			
Diphtheria or Membranous Croup			
Bubonic Plague	„	„	23rd January, 1900.
Infantile Paralysis (Acute Anterior Poliomyelitis) ...	„	„	1st February, 1912.
Acute Malarial Fever	„	„	17th March, 1915.
Epidemic Cerebro-spinal Fever (Meningococcal Meningitis)	„	„	11th October, 1915.

All the above-mentioned diseases, except plague, are notified in the first instance to the local authority for the district. Particulars of the case are then entered in the infectious disease register kept by the local authority, whose duty it is to inspect and disinfect premises, serve notices, &c. After entry in the local authority's register, the notification certificate is sent to the Board of Health for record. Watch is thus kept by the central health authority on any unusual number of cases occurring in any district. Should this happen, an investigation is made by Departmental officers, sometimes at the request of the local authority, into the cause of the outbreak, and assistance is given by the Department's trained officers, or recommendations are made to the authority as to the best means of coping with the outbreak and of preventing its recurrence.

Scarlet Fever.—The outstanding feature in the incidence of infectious disease in the State during the year was the great increase in scarlet fever, which attained the proportions of an epidemic, 8,335 cases being notified, as against 3,207 in 1914, an increase of 5,128. The increase was more marked in the country districts than in the metropolis, but was very pronounced throughout the State. Since 1908 there has been a relative immunity from scarlet fever, which has doubtless to some extent conditioned the present outbreak, inasmuch as large numbers of children have in the meantime been added to the population, who have not been attacked, and were, therefore, susceptible. It is a well-known fact that susceptibility to the infection of scarlet fever diminishes rapidly towards the period of adult age, even among those who have never been attacked. The number of deaths due to scarlet fever was 97, as compared with 21 in 1914. It was, therefore, not only more prevalent, but also more virulent in type during the year under review. One feature in the outbreak of 1915 was the heavy incidence upon some of the country districts, notably Bathurst, Bombala, Bibbenluke Shire, Broken Hill, Lithgow, and Mudgee.

Typhoid Fever.—Typhoid fever showed quite an appreciable decrease in 1915, 1,941 cases being notified, as against 2,284 in 1914. Broken Hill showed a very satisfactory improvement, as only 147 cases were notified in 1915, compared with 395 in 1914, and 217 in 1913.

1913. There were 219 deaths from typhoid fever in 1915. In the early part of the year an outbreak occurred in the Metropolitan district, and was investigated by the Acting Medical Officer of Health for the Metropolitan District (Dr. F. M. Suckling), who traced the infection to a "carrier" employed at a local dairy. Drastic steps were taken to cope with the outbreak, with ultimately successful results. Anti-typhoid vaccination was offered to every member of households in which a case occurred, and was frequently accepted.

Diphtheria.—Diphtheria continued prevalent in the State, but not more so than in 1914; 5,838 cases of the disease were notified throughout New South Wales, while the number for 1914 was 5,831. The deaths from diphtheria were equivalent to a fatality rate of 4·52 per cent. of those attacked.

Bubonic Plague.—No case of plague in man has been recorded in this State since 1908.

Infantile Paralysis.—Sixty-three cases of infantile paralysis (acute anterior poliomyelitis), were notified in 1915, a decrease on the previous year when 79 cases were recorded.

Since infantile paralysis was proclaimed in 1912 the following cases have been notified :—

	Cases.	Deaths.
1912 (1st February to 31st December)	47	...
1913	43	10
1914	79	14
1915	63	11

Acute Malarial Fever.—This disease was gazetted as a notifiable disease on 17th March, 1915, and between that date and 31st December 105 cases were reported, with 2 deaths. The cases (with 14 exceptions), occurred among members of the Expeditionary Force who were on duty in New Guinea and other malarial regions in the Pacific, or were men from the warships. Malaria was made a notifiable disease in New South Wales for two reasons. Firstly, to ascertain the number of cases and the localities in which they resided, so that a check might be kept on any indigenous cases —if such occurred; and, secondly, so that patients might be advised as to the measures to be adopted against spread of the disease by using mosquito netting, &c.

Epidemic Cerebro-spinal Meningitis.—In addition to the outbreak of cerebro-spinal meningitis at Liverpool Military Camp—referred to elsewhere—a number of cases occurred in other parts of the State. In order that all possible measures might be taken for control and prevention of the disease, it was made notifiable from 11th October, 1915. From that date to 31st December 50 cases were notified, of which 33 proved fatal.

Pure Food Act, 1908.

An account of the work of this Branch will be found on page 31.

The Pure Food Act was passed in 1908, but active work in connection with its administration only commenced on 1st November, 1909. The staff, which then comprised only two officers, has since been increased to eight. Although very useful work has been accomplished, it is imperative that this staff should be considerably increased in order to ensure a more rigid and wider supervision of food products and their preparation, storage, and distribution throughout New South Wales.

During

During the years the Act has been in force very useful work has been done by this branch, entailing close application, constant vigilance, and continuous supervision. The aim has been to administer the Act by educational methods, but when necessary drastic action has been taken.

The work of the Pure Food Branch primarily includes—

Supervision of the milk supply, including inspection of milk stores, depôts, milk carts and utensils; purchasing samples of milk for analysis; and undertaking prosecutions for selling adulterated milk.

Purchasing samples of foods and drugs for analysis; and undertaking prosecutions for selling adulterated foods and drugs.

Inspection of stores, factories, and premises generally where food is manufactured, prepared, stored, or exposed for sale.

The premises inspected comprise butchers' shops, bakeries, jam factories, ice cream factories, small goods' factories, condiment factories, manufacturing confectioners, Milk vendors, restaurants, dining-rooms, fruit shops, wholesale and retail general stores, &c., &c.

Outside the routine collections of samples of milk and food and drugs for analysis, some of the matters more especially receiving attention during 1915 have been,—

Milk-vendors' Premises.—Several prosecutions have been instituted for exposing milk to contamination by flies and dust.

Preparation and Storage of Meat in Butchers' Shops and Small Goods Premises.—Particular care has been paid to the construction and cleanliness of the premises, the cleanliness of utensils, and provision of proper drainage.

Butchers' Cutting Carts.—A special inspection was made of all cutting carts trading in the Metropolitan district. Provided they are kept clean and the meat protected from contamination, these carts should serve a useful purpose in supplying meat in outlying districts where there are no butchers' shops.

Restaurants and Refreshment Rooms to the number of 591 were inspected, careful examination being made of the structural condition of the premises; the provision for the storage of food, the food itself, and the utensils for preparing it.

Bakers and Manufacturing Pastrycooks.—Three hundred and sixty-nine inspections were made. Bread delivery also received attention, and prosecutions were undertaken against carters who failed to protect bread from dust during delivery, or carried it on the footboard of the cart.

Hotels and Hotel Kitchens.—Two hundred and seventy-two inspections were made, a matter receiving particular attention being the regular and constant supply of running water for washing glasses.

The statement which appears on page 34 shows the number of samples of milk, foods, and drugs collected, the number of premises inspected, and the result of prosecutions instituted by officers of this Branch in 1915, and also for the period since the Act came into force in 1909.

Quack Medicines and Appliances.—Under the Pure Food Act the Department has devoted special attention to advertised medical preparations and appliances. In recent years large businesses of a nefarious character have grown up in all the States as a result of extensive advertising of nostrums and appliances which are often harmful, usually quite worthless, and always misleading and dangerous because in many cases they prevent sick persons from obtaining proper treatment in time to save them from prolonged or fatal illnesses. The drastic action taken by the Board of Health from time to time has

has had the effect of stopping the circulation of a great deal of false and misleading literature in connection with such "cure-alls." Proceedings were successfully taken in a number of instances during 1915 against proprietors of patent medicines where the label or the literature accompanying the package made exaggerated claims, was false and misleading, or the contents were falsely described. Much useful work in this direction remains to be done, and the Board of Health is determined, as far as the provisions of the Pure Food Act will allow, to prevent the advertisement and sale of nostrums which are ineffective in their application or are falsely described.

Removal of the Names of Medical Pratitioners from the Medical Register.—It was found necessary to take action against two medical practitioners who were found guilty of "infamous conduct in a professional respect," which resulted in their names being removed from the Medical Register.

In one case the medical man had associated himself with the "Ladies' College of Health," the proprietors of the prohibited Orange Lily remedies. In the other case the medical man had employed persons to tout and solicit for patients.

In another recent prosecution a man was fined £50 or four months' imprisonment for using the description "Medical Specialist," thus implying that he was a legally qualified practitioner.

Revision of Regulations under the Pure Food Act.—An important item in the year's work was the rescission of regulations first gazetted under the Pure Food Act, 1909, and the substitution of a new code. The new regulations are, as far as practicable, uniform with the regulations in force in other States of the Commonwealth, but they cannot be made absolutely identical owing to divergent State laws and commercial interests. The standardisation of the code has entailed a vast amount of work on the Advisory Committee. It is anticipated that the revised regulations will be not only beneficial from the public health point of view, but also a great convenience to manufacturers and traders. In the standardised code new regulations have been included which are designed to secure food from being contaminated during the process of preparation, storage, and handling. With a view to interfering as little as possible with legitimate business, the Department will allow a reasonable time, probably six months, for the various firms to dispose of their stocks under the old regulations, and to provide new labels where such are necessary.

Guarantee Clause.—The Department has recognised for some time that the guarantee clause of the Pure Food Act was misinterpreted by persons who did not understand its intentions. The words "Guaranteed under the Pure Food Act" were only intended as a guarantee from the manufacturer to the retailer and not from the retailer to the public.

It was ascertained that consumers were led to believe that the words indicated that contents of packages had been analysed or examined by a State officer, who had certified to their purity. This is not the case, and steps are being taken for amendment of the Act. The intention in framing the clause was to enable a guarantee to be given by manufacturers to retailers, which would operate to exonerate retailers if the contents of packages sold by them were found to be adulterated.

Contaminated Oysters.—The Department has on many occasions directed attention to the possibility of typhoid and other intestinal infections being acquired by partaking of oysters from the harbour foreshores where they are liable to be contaminated by sewage and other waste matters. Such oysters are not only consumed by picknickers, but are collected and sold by itinerant vendors in the city and suburbs in bottles which carry no evidence to show where the

the oysters were collected. As a result of action by the Department a proclamation was issued prohibiting the collection of oysters from portions of the harbour foreshores which were likely to be polluted. Notwithstanding such proclamation certain persons, for a little gain, were found from time to time selling oysters from contaminated areas. Whenever detected such persons were prosecuted and heavily fined.

Chemical Laboratory.

The staff of the Analytical Laboratory is largely occupied in the analysis of food and drugs for the purposes of the Pure Food Act. The work of the Branch (see Report, p. 28), in spite of general adverse circumstances due to the war, increased slightly during the year, the total number of samples analysed being 12,480, as compared with 12,438 in 1914. The increase is largely accounted for by analytical work undertaken at the request of the military authorities in connection with supervision of the supply of provisions to troopships and military camps. For this purpose 313 samples of various kinds of food were analysed, 20 per cent. of which failed to comply with the standards of the Pure Food Act. In connection with the general administration of the Act, 11,120 samples were examined, of which number 723 were adulterated, or 6·5 per cent. About the middle of the year, when the scarcity of butter was acutely felt, complaints were received that margarine was being substituted. Ninety-two samples of butter were collected and analysed; and only four of these were found to contain margarine. Of ninety medico-legal exhibits submitted by the Police Department, thirty-six were human viscera. Two of the latter were of especial interest, being cases of veronal poisoning. Only once before, so far as can be ascertained, has death by this drug been recorded.

Milk Analysis.—In regard to milk analysis, the proportion of adulterated samples fell to 4·2 per cent. in 1915, as compared with 4·7 in 1914. Owing probably to a more efficient system of supervision, the retail milk supply of the Metropolitan District is of much better quality than that of country districts, where the adulterations rose to 11·4 per cent. in 1915, compared with 9 per cent. in 1914.

Meat Export Branch.

This Branch of the Health Department is chiefly concerned with the inspection of meat generally in the metropolitan area, and the examination of meat intended for export. The officers of the Branch work under the direction of the Veterinary Inspector in charge of Meat Export, whose detailed report appears on p. 46.

During the twelve months ended 31st December, a total of 3,805,557 food carcases were inspected, and of this number 26,982 were wholly or partially condemned. Details of the work of this Branch will be found on p. 49.

The State Government, under the powers conferred by the Meat Supply for Imperial Uses Act, 1915, acquired and consigned to the Imperial Government during the year, approximately 45,000,000 pounds of frozen meat. The examination of this meat and the subsequent checking of documents in connection with the shipping of it, has been in part carried out by the officers of the Meat Export Branch.

A noticeable feature of the year's operations in this connection was the extraordinarily high prices paid for cattle and sheep. The prices reached have been quite without precedent in the history of the State.

The New State Abattoirs at Homebush Bay were officially opened in April, 1915, and a small amount of slaughtering was done there for export, but the great bulk of the slaughtering for the Metropolitan District has been continued at the Glebe Island pending completion of the new Abattoirs.

Dairies Supervision Act, 1901.

An account of the work of the Veterinary Branch is contained on p. 42. Fifteen inspectors under the control of the Chief Veterinary Inspector are engaged in field work. In the execution of their duties between 1st January and 31st December they travelled 75,555 miles and inspected 12,525 dairy premises and 412,125 cattle. 1,066 animals were condemned and subsequently destroyed (tuberculosis 760, actinomycosis, 195, cancer, 99, other causes, 12). 126 cattle were subjected to the tuberculin test, 53 gave a positive reaction and were destroyed. The number of country slaughtering premises visited was 496. In the course of this work 4,431 beef cattle were examined, and 37 destroyed for various diseases, which rendered them unfit for human consumption. I again desire to direct attention to the need for the appointment of additional inspectors to this Branch in order that dairy premises may be more frequently inspected. As pointed out in the Chief Veterinary Inspector's report, so long a period as eighteen months may elapse between the visits of a departmental inspector. Local authorities are charged with the duty of making periodical inspections, but experience has disclosed that some local authorities are systematically neglectful of their duties in this respect, a tuberculous cow may therefore be yielding diseased milk and remain undetected for several months. For this reason I should be provided with a sufficient staff to enable inspection of every dairy to be made by a departmental officer at least once in every four to six months.

The Dairy Industry Act, 1915, which is administered by the Department of Agriculture, became operative from 1st January, 1916. All factories where butter, cheese, condensed milk and margarine are manufactured come under its control. This Department, however, retains the exclusive supervision of all dairies and milk depots.

Milk Standard.—For many years the Department has required that the fat content of milk shall not be less than 3·2 per cent. Various attempts have been made from time to time by sections of those interested in the milk trade to have this standard lowered, and pressure has been brought to bear with this object in view; the Department, however, has consistently maintained that 3·2 per cent. was not too high a standard. Its attitude in this respect is now being appreciated by many of those who formerly were most persistent in their efforts to secure acceptance of a lower fat content, as milk companies are paying higher prices for rich milk, with the result that consumers are receiving a more nutritious and higher grade article. The only effect of lowering the standard would have been to offer a premium to the dairy farmer who kept herds producing a greater quantity of milk of a less nutritive character.

Regulations under the Dairies Supervision Act.—A defect of some importance in the Dairies Supervision Act is the lack of power to make regulations for its proper administration. An amending Bill to remedy this omission has been prepared, and will, it is hoped, become law during 1916.

Sanitary Inspector's Branch.

The report of the Chief Sanitary Inspector, (p. 51), refers to the increased facilities afforded by the Public Health (Amendment) Act, 1915, in relation to the work of his staff in connection with dilapidated and insanitary dwellings, and to the wider powers conferred for improving the sanitation of country hotels.

Inspection of Country Towns.—This work has been continued, inspections have been made of nine country towns during the year, and thirty others have been re-inspected to ascertain if effect had been

been given to departmental recommendations. Eleven outbreaks of infectious disease were investigated by officers attached to this Branch.

Local Authorities and Sanitation.—Inspections made by officers of this Branch throughout the year revealed that in certain localities the requirements of ordinances respecting provision of sanitary services were being ignored. Neglect in this important respect was immediately brought under the notice of delinquent Councils, who in most cases realised the seriousness of the subject, and took the necessary action for conserving the health of their districts, without the Department being compelled to have recourse to the more stringent powers which it possesses of superseding the local authority.

Noxious Trades Act.—The provisions of the Noxious Trades Act were extended, in 1915, to Goulburn Municipality and Macleay Shire. In the metropolitan district thirty-two night inspections were made in neighbourhoods from which complaints had been received that nuisance was caused by fat-extractors allowing offensive vapours to escape, and resulted in seventeen traders being prosecuted for breaches of the Noxious Trades Act and regulations. Grave nuisance was constantly experienced from offensive smells, due to the escape of noxious gases. The regulations under the Noxious Trades Act require that noxious gases generated during boiling-down processes must be effectually destroyed before being discharged. As the Local Authority was not exercising a sufficiently strict supervision to ensure that the regulations were being observed, Inspectors from the Department took the matter in hand. The fines inflicted generally had a good effect, as no complaints of nuisance from this source were received during the later months of the year.

Garbage Disposal in the Metropolitan District.

During the year the Department has continued its efforts to abate nuisance from garbage tips by urging Councils to instal incinerators for destruction of all refuse by fire. Applications for licenses from rag-pickers who were found to be collecting rags from garbage tips have in every case been refused.

In 1915 a comprehensive report was made by the Acting Medical Officer of Health (Dr. F. M. Suckling) on garbage disposal in the Metropolitan district, which disclosed that the Municipalities of Annandale, Balmain, Leichhardt, Manly, North Sydney, and Petersham were provided with garbage destructors, and that the garbage from the Glebe Municipality was punted to sea. In the remaining thirty-two districts included in the Metropolitan area the garbage was deposited at tips.

Dr. Suckling stated that his inspection revealed very unsatisfactory conditions, as in most instances the tips were unsatisfactory, and in some cases disgraceful.

In July suburban Councils within the Metropolitan district who did not already possess garbage destructors were informed that at the expiration of six months from 2nd August, 1915, the Board of Health would consider what steps should be taken to require installation of garbage destructors unless in the meantime measures had been taken to dispose of garbage in a manner satisfactory to the Board.

Since the beginning of the year Meldrum Garbage Destructors have been installed at North Sydney and Marrickville at a cost of £9,000 each. A tender has been accepted for the same type of destructor by the Paddington Council, but owing to the war, difficulty is found in obtaining the plant from England.

The

The Woollahra Council has installed a Plant Lightning Crusher which pulverises the garbage into a powder of some manurial value. This apparatus, the cost of which is less than £3,000, is now under close observation by the Department. If it prove equal to the claims made, in all probability it will be availed of by several suburban and country local authorities. A more simple type of incinerator, similar to those in use at Liverpool Camp, which is considered fairly efficient and not costly, has been adopted in some districts.

Sewerage.—In certain localities in the Metropolitan district which are not yet sewered, special representations have been made to the proper authorities by the Board of Health with a view to having the system extended to such areas as expeditiously as possible.

Disposal of Garbage in Country Towns.—Schemes for dealing with the refuse of country towns have received considerable attention. In order that expert advice may be given to local authorities, the Department is always willing, so far as the limited staff at its disposal will permit, to assist local Councils in dealing with difficulties incidental to sanitary affairs, by detailing its officers to make careful local inspections and inquiries.

Inspection of Water Supplies in Country Towns.—Inquires have been made conjointly with officers of the Department of Public Works into a number of proposed schemes for supplying country towns with water. The evidence of the medical officers of the Health Department is naturally confined to advising the Public Works officers on the public health aspect of such schemes. As country towns develop a very large increase in this work is inevitable, inasmuch as the inauguration of such schemes, quite apart from their engineering aspects, require very careful investigation on the public health side.

Private Hospitals Act, 1908 (p. 55).

The Private Hospitals Act has been in operation since 1909. Its object was to bring under efficient central control all private hospitals throughout the State, and no private hospital is now allowed to carry on business unless it is registered by the Department of Public Health, and unless it complies both as to structure and management with certain conditions laid down in the regulations under the Act. It was thought that there would only be a comparatively small number of private hospitals to register; these expectations were not realised, for in 1915 there were no less than 535 registered private hospitals, and eleven exemptions. Many of the hospitals are situated in townships where there is no public hospital or other provision for the reception of the sick, and thus they serve a very useful purpose. In the towns where there is a public hospital they lessen the demand on its accommodation by providing for those who can afford to pay for treatment, and so leave more beds available for those who are not so fortunate financially. It has been the practice for a medical officer of the Department to inspect all private country hospitals once at least in each year to ensure that they are complying with the provisions of the Act, but owing to the absence of so many medical officers on military duties, it is questionable whether the administration of the Act for the present can be as fully maintained as the Department would wish.

When this Act was brought into operation the Board of Health recognised that a certain amount of leniency must necessarily be shown in dealing with establishments that had been in existence, in some cases, for many years; where, however, hospitals have been established since 1st July, 1910, the Department insists that they shall be fully up to the structural requirements laid down by the regulations, and that resident managers, except in certain special cases, shall possess proper certificated qualifications.

Early Notification of Births Act, 1915.

This Act was assented to on 15th February, 1915. It provides that births occurring within specified districts shall be notified to the Under-Secretary of the Department of Public Health within thirty-six hours after the birth. The Act is in operation in all the more congested areas of the Metropolitan and Hunter River Districts. Its special object is to ensure that in the less well-to-do districts the mothers of newly-born infants shall be visited by a trained nurse within the first week of their confinement, with a view to seeing that necessary advice and attention are given for the welfare of the infant and the mother. This work is carried out from the Baby Clinics, of which there were nine at the end of the year, situated at Alexandria, Balmain, Glebe, Mascot, Newtown, North Sydney, St. Peters, Waterloo, and Newcastle. These clinics are now administered directly by the Minister of Public Health.

Reports of Medical Officers of Health.

Comprehensive reports by the Acting Medical Officers of Health for the Metropolitan and the Hunter River combined districts (Drs. F. M. Suckling and Booth-Clarkson) will be found on pp. 82 and 98 respectively.

Country Hospitals.

In inspecting country hospitals it is frequently found—even in some country towns of importance—that they contain only general wards, one for male and one for female patients. In my opinion a country hospital, receiving subsidy from public funds, should contain:—

(1) General wards for the admission of male and female patients.
(2) Operating room or theatre.
(3) Isolation block for infectious cases.
(4) Maternity ward.
(5) Strong-room for the segregation of delirious or insane patients.

In all centres of population where a hospital is necessary, the provision of the accommodation outlined above is essential. Every country hospital, undertaking to receive accident and surgical cases, should be provided with a properly equipped and well-lighted operating room. Isolation is the most effective method of preventing spread of infectious diseases; it is therefore essential that an isolation block should be available to which the first case or cases of infectious disease in a district can be removed, as their isolation would probably prevent dissemination of the disease throughout the locality.

In country districts provision for lying-in cases should often precede the establishment of an hospital for general cases, more especially in scattered districts where expectant mothers are beyond the reach of medical and nursing aid, and most certainly on erection of a country hospital a ward, or portion of the female ward, should be set aside for maternity cases.

In only a few of the larger country hospitals is a strong-room available, although this is an essential provision both for the safety of an insane patient, temporarily located there, and to protect other patients from annoyance and loss of rest.

Hospital Admission Depot.

A report on the work carried out by the Government Medical Officers for Sydney (Drs. A. A. Palmer and A. C. Cahill) appears on page 76. Every morning between 9 and 12 o'clock numbers of people suffering from various ailments or infirmities, who seek hospital treatment or admission to an asylum, attend at this Depôt, where they are examined by the medical officers in charge, and orders issued for their

 admission

admission to the institutions most suitable to their needs. When necessary, destitute sick persons are visited at home and arrangements made for their transfer to hospital. There are also brought to this Depôt numbers of letters from medical practitioners certifying that patients are suffering from infectious and other illnesses, and cannot be cared for in their own homes. Arrangements are then made for their admission and removal to hospital by the ambulances attached to the Depôt. In 1915 orders of admission to hospital and asylums were issued to 13,152 persons, and 1,457 orders were given for out-door treatment.

Examination of candidates for admission to the various branches of the Public Service and to the Police Force are also undertaken by the medical officers attached to this Depôt, who also have the duty of making all medical examinations required for the purposes of the Factories Act.

Medico-legal duties.—Dr. Palmer is charged with all medico-legal work required by the Government, and in this connection carries out post-mortem and other examinations required by the Justice and Police Departments.

The Coast Hospital.

In 1915, 4,966 patients were treated at the Coast Hospital, of which 4,293 were discharged. There were 184 deaths, the death rate (3·64) being slightly lower than in 1914 (p. 128).

On 31st December there were 489 patients in hospital, an increase of 57 occupied beds, as compared with the beginning of the year, when the number was 432. This increase was largely due to the epidemic of scarlet fever which still prevailed at the end of the year, when 132 cases of it remained under treatment. The accommodation available in the infectious division of the hospital proved insufficient to meet the requests for admission, and temporary buildings with an equipment of 55 beds were erected as a a matter of urgency. By this means the demand for beds was met as far as practicable at the time. Three large units of the new hospital, of which the foundation stone was laid in November, 1914, are approaching completion. These are of modern design and, when finished, will provide 126 beds. Sufficient beds should therefore be available shortly to meet immediate calls. The new division of the Coast Hospital when completed will contain 840 beds.

With a view to coping with the great demand for beds in 1915, the medical officers at the Hospital Admission Depôt gave preference to patients who could not be properly isolated in their own homes, or where the risk of spread of infection to other occupants was greatest.

The Medical Superintendent (Colonel R. J. Millard) and twenty members of the medical, nursing, and clerical staff have joined the Expeditionary Forces since the outbreak of war. The remaining members of the staff have had a strenuous twelve months' work, which has been rendered more trying by having to provide extra accommodation and attend to an increased number of patients.

Many improvements have been effected to the buildings and grounds. The peat swamps on the hospital property were drained, and the soil turned to profitable use. Fully 150 acres of this land were found suitable for agricultural purposes, and are producing profitable crops much earlier than anticipated. The yield of vegetables during 1915 was 18,103 lb.—a very satisfactory return considering the small area treated and the unsweetened condition of some of the soil. The draining of the rest of this swamp is being proceeded with as speedily as practicable.

The

The small dairy herd purchased towards the end of 1914 was sufficiently increased in 1915 to enable the children under treatment to be supplied with fresh milk. The production amounted to 6,320 gallons, and the cost was materially less than the contract rate.

The operations indicated above are in accordance with the policy of the Department to utilise wherever practicable inmate labour from the asylums. This is found to be not only in the interests of the men by giving them some light occupation at which they can earn a little money, but also tends to economy in management of the State hospitals by providing them with ample supplies of fresh milk, eggs, vegetables, and flowers.

Another saving effected in management was in respect of the bread supply, arrangements having been made with the Comptroller-General of Prisons for all bread required to be prepared and supplied from the Penitentiary, which is situated about a mile distant from the Coast hospital.

David Berry Hospital.

At this institution 226 patients were treated, the number for 1914 being 225. The detailed report will be found on p. 153.

Changes in the nursing staff took place, owing to members leaving on military duty. Matron Perkins sailed for Egypt on 16th August, and was temporarily succeeded by Matron Shelley.

Convalescent Homes.

The first Annual Reports of the recently-established convalescent homes will be found on pages 162-3. The Convalescent Home for Men —Denistone House, Eastwood—which had been provisionally in use from August, 1914, was officially opened by Mrs. W. A. Holman on 25th February, 1915.

The first patients were admitted to the Strickland Convalescent Home for Women, "Carrara," Rose Bay, at the beginning of January, 1915, but the Home was not officially opened until 16th March. The number of patients treated during the year was 444. When opened the hospital was equipped with 30 beds and 4 cots; this number was found insufficient, and 10 additional beds were installed. This Home proved a great boon to women discharged from general hospitals after severe illnesses or operation, and to mothers leaving maternity hospitals at the end of the prescribed period of ten days.

At Denistone House 242 men were treated. The majority of these patients came from hospitals in and around Sydney, and they had either undergone operation or were convalescent after acute illness. In nearly every instance the men left the Home well and strong. Twenty-five beds are available, and the average stay was four weeks.

Admission.—All persons are eligible for admission to these Homes who are convalescent from serious illness, or whose health has been seriously impaired or weakened, and who are likely to be benefited by rest and change.

State Hospital for Sick Babies (p. 158).

The Lady Edeline Hospital for Babies has proved of the greatest service in the treatment of gastro-enteritis and other infantile diseases peculiar to young children. Sick infants up to the age of two years are admitted for treatment. A total of 288 infants were admitted to the institution in 1915. The diseases treated included gastro-enteritis, ilio-colitis, pneumonia, bronchitis, pneumonia and measles, erysipelas, jaundice, pyelitis, inguinal hernia, congenital syphilis, gonorrhœa, eczema, marasmus and purulent ophthalmia.

The

The year under review was a strenuous one for the staff, especially during the latter months, when there was an epidemic of gastro-enteritis of a very severe septic type with a high mortality rate.

I must again emphasise that babies should not be sent to the hospital in a collapsed or moribund state, when no amount of nursing, treatment, or care can avail to save them. The experience of the Department is that babies are often treated at home until their condition becomes so alarming that the mothers are advised to try hospital treatment as a last resource. The consequence is that many infants, whose lives might have been saved by earlier treatment at the hospital, do not come into the hands of skilled nurses until they are in a dying condition, and beyond hope of recovery.

A wharf at Steel Point which adjoins the hospital grounds was completed during the year, and ferry-boats now call there regularly.

State Hospitals and Asylums.

The detailed reports on these institutions are contained in Part IV (pp. 168-189).

There were 3,407 persons remaining under treatment on 31st December, 1915, a decrease of 111 as compared with 1914, when the number was 3,518.

As indicated in previous reports, the hospital conditions throughout the institutions set apart primarily for the treatment of the sick are rapidly being improved to meet present and future requirements. I am again deeply indebted for the invaluable assistance rendered by honorary consulting physicians and surgeons, which has resulted in a very great number of patients receiving locally the expert attention which in previous years could only have been obtained at the larger metropolitan hospitals.

Each State hospital now specialises in certain sections of medical work, and the advancement of the institutions in this respect has been aided by the energy and willingness of the staffs in carrying out the duties entrusted to them.

The greater part of the operative work has been done at Rookwood, where a surgical ward and an operation theatre were established in 1910. It is the most centrally situated of the institutions, and as the facilities afforded are much more complete than at Liverpool, many cases are transferred there which require special operative or other special treatment. Liverpool and Newington have also performed excellent work in the different medical sections.

Owing to very serious illness Dr. Joseph Beattie, Senior Medical Superintendent, was compelled to relinquish his duty at the Liverpool State Hospital in July, and I regret to say was still absent on sick leave at the end of the year.

Work at the Rookwood State Hospital was carried on under disadvantageous circumstances, five members of the honorary medical staff having been accepted for active service; nine attendants, one nurse, and a clerk, also enlisted from there. At all the institutions members of the staff are absent on military duty.

Considerable improvements have been made in the grounds and surroundings of the various hospitals, and good progress has been made in the farm and garden sections, in which inmates certified "able to work" are encouraged to assist.

Pharmacopœa.—With a view to reducing the expenditure in connection with drugs, I had prepared a pharmacopœa for use in all the State institutions.

Asylums for the Infirm.

There are two asylums for the infirm and destitute at Parramatta where persons not needing hospital or special medical treatment are located.

George Street, Parramatta.—This institution is for men only. The building is situated in George-street, near the river bank. At present only the main portion, *i.e.*, the old military barrack section, is being used, the other portion, which was a tweed mill in former years, and which was used for the accommodation of hospital patients, was never suitable for the purpose, and was therefore condemned and partly demolished after accommodation was provided at Rookwood for the patients.

In former years this institution carried as many as 1,200 patients; the present population is 189, and accommodation could be found for about 130 more. The more robust men are kept at this institution and distributed amongst the other places as workers are required. The industries carried on include tailoring and boot-making.

Macquarie Street, Parramatta, is also for men. This building is situated in Macquarie-street opposite the Public School, and was probably the site of the first hospital in Australia, the principal buildings being erected during Governor Lachlan Macquarie's tenure of office. Blind men for whom nothing further can be done in the way of treatment are housed here. The population is 170, and the full carrying capacity is 200. The industries carried on consist of tailoring, shoe-making, vegetable growing, and bread-baking. From here, bread is supplied to Rookwood, Newington, and George Street.

The Cottage Homes for Old Couples are situated in Valentine Avenue near the Parramatta railway station. With the passing of the Old Age Pensions Act, the request for these cottages ceased, old couples preferring to draw their pensions and choose their own place of residence. The cottages were discontinued as a separate institution from 1st September, 1915, the six couples then remaining being placed under the supervision of the Matron in charge of the Macquarie-street Asylum.

Trawled Fish.—Several efforts have been made during the year to take advantage of the large supplies of fish brought in by the State trawlers to supply the State hospitals and asylums with fresh fish, but difficulties were met with in the matter of speedy transport. It is expected that during 1916 a means will be found of overcoming the obstacle. A motor lorry, which the Department has recently acquired, may be of service in this connection.

Improvement in Working Conditions of Employees.—The male and female nursing staff conditions—both as regards the hours of duty and salaries—have improved since the Government introduced the minimum wage of £110 per annum in 1911. The whole staff, with few exceptions, benefited. The salaries of artisans and other employees—whose wages were not in accord with the award for similar services outside the Public Service—were raised to the standard. The forty-eight hours per week system was also introduced in 1912.

In 1915 a committee was appointed by the Public Service Board to consider the further measures to be taken for betterment of the working conditions of employees at State institutions under my control, and under control of the Inspector-General of the Insane. The members of this committee were: Mr. Walter Loveridge, representing the Public Service Board; Mr. T. H. Neely, Secretary to this Department; Mr. S. W. Ebsworth, B.A., representing the Inspector-General of the Insane; Mr. Guihen, Secretary of the

Hospital

Hospital and Asylum Employees Union; and other representatives of that body. Conferences were held extending over several months, and, it is anticipated, that as a result of their deliberations, working conditions will be placed on a more satisfactory basis, both from the standpoint of the Departments concerned, and the staffs. The deliberations of the Committee covered the questions of appointment, rates of pay, increments, promotions, allowances, hours of duty, annual leave, &c.

The Microbiological Laboratory (p. 192).

The work of the Microbiological Laboratory has continued to increase in a greater proportion than can be accounted for by the altered conditions brought about by the war. Not only have the number of routine examinations—chiefly consisting in the identification of the organisms of infective diseases—been greater during 1915 than during the previous year, but also the amount of investigational work has increased as well. The more routine examinations that are carried out the more efficiently is the health of the public preserved. In every case in which—in a particular patient—organisms capable of conveying disease to other people are detected by bacteriological means, and thereby their presence or absence no longer left in doubt, is the protection of other people who may be brought in contact with the patient still further ensured. By the accurate microbiological indentification of the disease more careful measures can be taken to prevent its spread, and to facilitate the cure of the patient. In this way the benefit to the community at large of the routine examinations conducted by the Microbiological Laboratory can be assessed, and it is hoped that eventually—when the fullest use is made of the facilities granted—the protective measures taken as a result of these examinations will manifest themselves in a definite diminution in the number of cases of communicable diseases, and in the absence of epidemics of a widespread character.

Still more important, perhaps—in the public interest as a whole—than routine examinations is research into the nature of various diseases, and into the ways by which they may be communicated. Such investigations should form an integral part of the work of the microbiological laboratory of every department of public health, and it has always been the endeavour of the laboratory of this Department to carry out work of this nature to the fullest extent possible with the means at its disposal. With an increase of staff—and with this object in view—still more may be done than has been done in the past; and, considering the requirements of this State, such an increase—as soon as circumstances arise by which it can be granted—will well repay the community.

Venereal Disease.

A clinic for the treatment of venereal diseases at the Royal Prince Alfred Hospital was opened on 11th January, 1915. This night clinic was an extension of the system of afternoon clinics for treatment of venereal diseases, these latter having been in existence for several years. At the afternoon clinics over 600 patients were treated in 1913; and in 1914, 800. The figures for 1915 show an enormous increase, a greater number of patients being treated at this clinic than at all the other out-patient departments of the hospital.

Owing to the dispute between the hospital authorities and the Minister of Health in regard to certain matters, the night clinic at the departmental Hospital admission depôt was re-opened in February, 1915, and remained open until the middle of April, when it was finally closed, the difficulty with the authorities of the Royal Prince Alfred Hospital having been satisfactorily adjusted. The

The attendance at the Royal Prince Alfred Hospital shows the need for opening night clinics at other large hospitals.

A Select Committee under the Chairmanship of Dr. Richard Arthur, M.L.A., was appointed in July, 1915, "to inquire into and report upon the Prevalence of Venereal Diseases in this State, their effects upon the health of the community, and the means by which those effects can be alleviated or prevented," and presented a progress report in November, 1915.

Shortage of Medical Men and Trained Nurses.

Owing to the demands of military service and the need for medical men at the front, the University made special provision for consolidating the medical course to enable the final examinations to be held in August, instead of at the end of the year, for all graduates who intended to enlist for active service.

Similar arrangements were made by the Australasian Trained Nurses' Association in regard to their examinations, as there were not sufficient trained nurses to meet the demands for war service, and to do the work required in the State.

Training of Volunteer Nurse Assistants.

To assist in meeting the need for making ample provision for nursing returned soldiers, of whom many can be nursed in their own homes, it was considered advisable to afford young women an opportunity of acquiring an elementary knowledge of nursing, so that they might assist in the home nursing of the sick and wounded. For this purpose classes were established at the Coast Hospital, and have been continued for some months past. Similar arrangements were made by other metropolitan hospitals.

Country Hospital Inquiries.

During the year officers of the Department visited six country hospitals for the purpose of conducting inquiries, with a result that action was taken to overcome the difficulties in regard to such institutions. The hospitals visited were situated at Nyngan, Mudgee, Bundarra, Wellington, Goulburn, and Kurri Kurri.

Model Rules for District Hospitals.

In August an amended code of rules was drawn up for the assistance of the committees of public hospitals. This code was issued after careful study and comparison of the rules adopted from time to time at a large number of such institutions in New South Wales.

Fees Paid to Medical Practitioners.

The scale of fees payable to medical practitioners for services required by the Government, and for attendance at coroners' inquests, &c., were revised during the year, the principal alteration being the substitution of a flat rate of 5s. a mile travelling allowance for the varying scales previously in use.

New Board Member.

The President of the Chamber of Commerce is ex-officio a member of the Board of Health, which welcomed to its first meeting in August Mr. George A. Parkes, who had been elected to succeed Mr. F. E. Winchcombe.

The late Dr. Ashburton Thompson.

The Board of Health learned with very deep regret of the death of its late President, Dr. Ashburton Thompson, which took place in London on 16th September, 1915.

Dr.

Dr. Ashburton Thompson joined the public service of this State in 1884, when there was an outbreak of virulent smallpox in Sydney. He was appointed as assistant medical officer on the staff of Sir Charles Mackellar, K.C.M.G., who at that time was medical adviser to the Government. The outbreak led to the appointment of the Australian Sanitary Commission on Federal Quarantine, of which Dr. Thompson was appointed secretary. Twenty-five years later the Commonwealth Government showed its appreciation of the scheme then proposed by adopting it as the basis of the present quarantine system.

During his long period of service, Dr. Ashburton Thompson did splendid and lasting work for the promotion of public health. When he joined the staff, the Board of Health was accommodated at a private house at 127 Macquarie-street, and there were practically no qualified sanitary officers in the State, other than those attached to the Board's staff

Dr. Thompson was a recognised authority on smallpox, plague, and leprosy, and his writings on the two latter diseases gained him a world-wide reputation. He was awarded a prize for the best history of leprosy by the National Leprosy Fund of Great Britain in 1898; and his reports on the outbreak of plague at Sydney are widely quoted. Dr. Thompson was one of the first investigators to adduce indisputable evidence that this disease was communicated from rats to man by the agency of fleas.

Death of Miss L. T. Spencer.

With regret I mention the death from typhoid fever of Miss I. T. Spencer, a second-year nurse at the Coast Hospital. The death of a nurse from an infectious disease probably contracted in the course of her duty in tending and caring for others is always a cause of sadness, and much sympathy was felt for the bereaved relations.

Retirement of Government Analyst.

Mr. William Mogford Hamlet, F.I.C., F.C.S., who was appointed as Government Analyst in 1887, retired from the position at the end of April, 1915, after nearly thirty years of distinguished service.

Mr. Hamlet carried with him the good wishes of every member of the staff for his long continued happiness and prosperity.

Appreciation of Staff.

I have been particularly indebted throughout the year for assistance daily rendered to me by the senior medical and clerical officers, and I have much pleasure in recording my appreciation of and thanks to them for their assistance; and also to every other member of the professional, clerical, and general staffs. The high standard of efficiency at which the work of the Department has been maintained throughout the year has only been possible through the members of my staff loyally and spontaneously taking upon themselves the burden of extra work entailed by the absence of so many of their comrades at the front.

The following figures will serve to indicate the volume of work performed during the year under review:—

	Record papers.	Vouchers.	Infectious diseases notification.
1915 ...	36,908 ...	19,700 ...	16,693

Inadequate Accommodation for the Head Office Staff.

In my report for the year I again find it necessary to direct attention to the inadequate accommodation for the Head Office staff. Extension of the health policy of the Government makes it essential that the accommodation provided for administrative purposes should be materially increased and of a better character than that now available.

Assistance Rendered by Other Departments.

I again tender my thanks to other branches of the Public Service, particularly to the Crown Law Department, to the Inspector-General of Police and his officers, and to the Director of Agriculture and his staff of dairy inspectors, for the valuable assistance which they have rendered throughout the year in various directions in matters affecting the public health.

Reports on Branches.

A report by the officer-in-charge of each branch is appended hereto.

ROBERT PATON,
Director-General of Public Health.

T. H. Neely,
Secretary.

PART I.

Public Health Administration.

	PAGE.
Chemical Laboratory: Report of Government Analyst	28
Pure Food Act, 1908: Report of Chief Food Inspector	31
Veterinary Branch and Dairies Supervision Act: Report of the Chief Veterinary Inspector ...	42
Meat Export Branch: Report of Veterinary Inspector in Charge	46
Report of the Chief Sanitary Inspector	51
Private Hospitals Act: Report by Dr. A. T. Chapple...	55
Infectious Diseases notified during 1915...	66
Report by the Government Medical Officer for Sydney on the Hospital Admission Depôt, and Ambulance Service and Disinfecting Station, Woolloomooloo Bay	76
Summary of Quarterly Returns from Local Authorities showing action taken by them under the Public Health Act, 1902, during 1915	76
Return showing the number of permits issued for exhumation of bodies and of burials in closed cemeteries for the years 1906 to 1915 inclusive	80

Part I.

Public Health Administration.

CHEMICAL LABORATORY.

REPORT OF GOVERNMENT ANALYST.

Staff.

Government Analyst: Thomas Cooksey, Ph.D., B.Sc., F.I.C.
Second Government Analyst: William M. Doherty, F.I.C., F.C.S.
Senior Assistant Government Analyst: Sidney G. Walton, F.C.S.
Assistant Government Analyst: Harold B. Taylor, B.Sc. (on Active Service).
Laboratory Assistant: Arthur D. Dibley, A.T.C. (on Active Service).
Temporary Junior Laboratory Assistant: Stanley Parsons.
Scientific Cadet: Gordon O'Brien.
Shorthand Writer and Typist: Grace McGlynn.
Attendants { Frank M. Armer. / Victor Williams.

To the Director-General of Public Health.

Sir,

Herewith I have the honor to submit to you the Annual Report of the Chemical Laboratory for the year 1915.

In spite of the general adverse circumstances, the work of the Branch has somewhat increased, the total number of samples examined during the year being 12,480.

Of this number 11,120 were examined in connection with the administration of the Pure Food Act, and 723 of these were found to be adulterated. The percentage of adulterations, viz., 6·5, is similar to that of 1914. A consideration of the results of milk analyses discloses a slight improvement in the quality of the retail milk supply of the metropolitan district, the proportion of adulterations falling from 4·7 per cent. in 1914 to 4·2 per cent. in 1915. In the country districts, however, the position is reversed, the percentage of adulterations rising from 9·0 in 1914 to 11·4 in 1915. Contrary to a general belief, the metropolitan retail milk supply is considerably better than that of the country, the difference no doubt being due to a more efficient system of inspection.

In response to complaints that margarine was being substituted for butter during the scarcity of this article, a number of samples were examined, and in only four cases was the complaint justified. Special attention has been devoted to a variety of patent medicines widely advertised as "cure-alls," and legal action, supported by the details of analysis, resulted in the prohibition of the sale of many.

The Stores Supply Department submitted 463 samples in connection with contracts for stores and general supplies for Government Departments, consisting of disinfectants, foods, inks, lubricating oils, leather, paint, soap, textiles, and many other articles.

Ninety exhibits were submitted by the Police Department, thirty-six of which were human viscera. Two of the latter were of special interest, being cases of veronal poisoning. As far as my knowledge goes, only once before has death by this drug been recorded.

Before concluding, mention must be made of the retirement from active participation in the work of the branch of Mr. Hamlet, after a period of thirty years' service, during twenty-eight of which he occupied the position of Government Analyst.

Two members of my staff are absent with the Expeditionary Forces, and although two minor appointments have been made, a considerable amount of extra work has been entailed upon my senior officers, which I am pleased to say has been cheerfully undertaken.

Tables showing details of the analyses carried out are attached.

I have, &c.,

THOMAS COOKSEY,
Government Analyst.

TABLE I.

SAMPLES examined in connection with the Pure Food Act, 1908.

Nature of Sample.	Authority.	No. of Samples.	No. of Adulterated Samples.
Acetic acid	Food Inspectors	1	.....
Baking powder	,,	2	1
Beeswax	,,	9	1
Butter	,,	64	9
Cheese	,,	28	1
Chutney	,,	1	.....
Cocoa	,,	1	.....
Coffee, coffee and chicory	,,	21	4
Condensed milk	,,	15	12
Confectionery	,,	12	12
Cordials, drinks, &c.	,,	21	10
Cream of tartar	,,	3	2
Cream of tartar substitutes	,,	2	.....
Cream	,,	1	.....
Dripping	,,	3	1
Drugs, pills, and medicines	,,	120	24
Edible oils	,,	22	.....
Egg and custard powders	,,	3	.....
Essences	,,	8	1
Fish (tinned)	,,	3	.....
Flour	,,	1	.....
Ginger	,,	2	.....
Honey	,,	5	.....
Ice cream	,,	21	14
Infant's foods	,,	3	.....
Jam	,,	12	.....
Lard	,,	3	.....
Margarine	,,	24	6
Metal piping	,,	1	.....
Minced meat	,,	26	2
Mustard	,,	1	.....
Pepper	,,	6	.....
Sauce	,,	14	3
Preservatives for food	,,	1	.....
Sago	,,	1	.....
Soap	,,	42	14
Spirits	,,	19	4
,,	Licensing Inspectors	504	19
Tea	Food Inspectors	1	.....
Vegetables (tinned)	,,	1	1
Wheat (poisoned)	,,	1	.....
Tin-foil wrappers	,,	6	5
Vinegar	,,	18	1
Milk	,,	4,273	269
,,	Municipalities	5,794	307
Totals		11,120	723

TABLE II.

SAMPLES examined in connection with Supply of Food to Troopships, Military Camps, &c.

Nature of Sample.	No. of Samples.	No of Samples not in accordance with the N.S.W. Pure Food Act.
Arrowroot	1	.....
Baking powder	3	1
Barley	3	1
Bread	1	1
Butter	28	7
Coffee, coffee and chicory	67	15
Condensed milk	22	6
Cocoa and chocolate	7	.....
Cream of tartar	1	1
Currants	3	2
Curry powder	1	.....
Eggs	1	.....
Flour	15	1
Jam	23	1
Lime Juice, and Lime Juice Cordial	12	1
Margarine	7	5
Mustard	12	5
Olive oil	1	.....
Oatmeal	12	.....
Pepper	40	13
Pickles	1	.....
Raisins	2	1
Rice	9	.....
Sugar	9	3
Tapioca	1	1
Tea	30	1
Sauce	1	.....
Vegetables	6	.....
Vinegar	25	3
Totals	344	69

TABLE III.

SAMPLES examined in connection with the Public Services of the State.

Authority.	Nature of Sample.	No. of Samples.
State Hospitals and Subsidised Charities	Bread	12
,, ,, ,,	Milk	36
,, ,, ,,	Spirits	5
,, ,, ,,	Peasemeal	1
,, ,, ,,	Vinegar	2
Stores Supply Department	Bread	1
,, ,,	Coffee extract and chicory	3
,, ,,	Disinfectants	65
,, ,,	Ink and ink powders	47
,, ,,	Lubricating oils	137
,, ,,	Leather	2
,, ,,	Lime juice	1
,, ,,	Oiled paper	3
,, ,,	Paint	2
,, ,,	Hydrogen peroxide	1
,, ,,	Polishine oil	1
,, ,,	Soap	192
,, ,,	Sulphur spray	1
,, ,,	Textiles	3
,, ,,	Vinegar	4
Public Works Department, Municipal and other authorities	Sewage	122
,, ,, ,, ,,	Water	216
Police Department	Human viscera	36
,,	Animal viscera	15
,,	Drugs	4
,,	Opium	3
,,	Finger prints	3
,,	Criminal investigations	79
Various authorities	Miscellaneous samples (including residual oil, caustic lye, asthma cure, rabbit poison, bituminous roofing, air, garbage, animal viscera, wood preservative, tobacco, tar, &c.).	69
Total		1,016

PURE FOOD ACT, 1908.

REPORT OF THE CHIEF INSPECTOR OF FOODS ON THE GENERAL ADMINISTRATION OF THE PURE FOOD ACT, 1908, DURING THE YEAR ENDED 31ST DECEMBER, 1915.

Staff.

Chief Inspector: ARTHUR KENCH.

Metropolitan Inspectors: GUY A. GRIFFIN, JOHN WILLIAMS, ROBERT HORNE, ARTHUR PATTON, WILLAM ALLISON (on Active Service).

Country Inspectors: CHARLES V. FRANCIS, WILLIAM H. EILBECK.

Clerical Staff: CHARLES G. LONGWORTH (on Active Service).

I HAVE the honor to submit herewith a brief report of the work performed by the Pure Food Staff for the year ending 31st December, 1915.

In submitting this report I desire to point out that although very useful work has been accomplished, it is imperative that the Pure Food Staff should be considerably increased to ensure a more rigid and wider supervision of food products and their preparation, storage and distribution throughout New South Wales.

The work of the staff comprises the regular and systematic inspection of all premises used in connection with the preparation, storage, and packing of foods and drugs for sale also food products found on the said premises at time of inspection, including butchers' shops, smallgoods factories, bakeries, jam factories, milk stores, and ice-cream factories, condiment factories, manufacturing confectioners, restaurants and dining-rooms, general stores (retail and wholesale) and many wholesale bulk stores and distributing depôts.

Milk supply.—The milk supply, both in the metropolitan and country districts, has received special attention. Many samples of milk have been procured and submitted to the Government Analyst for analysis. Milk-carts and milk-vendors' premises have received special attention. Many local authorities both in the metropolitan and country districts have allowed their sanitary inspector to be appointed a Pure Food officer under section 22 of the Act, and many of these officers have accomplished very useful work in connection with milk supervision, particularly in the regular sampling of milk whilst being delivered to the public, and forwarding samples to the Government Analyst for analysis.

RETURN showing the Samples of Milk submitted for Analysis during 1915.

Samples of Milk taken by—	Localities.		Total.	Adulterated.	Warnings.	Prosecutions.	Fines and Costs.
	Metropolitan District.	Country.					
							£ s. d.
Pure Food Staff	3,382	956	4,338	312	116	196	803 17 0
Local Authorities	4,645	1,105	5,750	190	119	71	504 4 5
	8,027	2,061	10,088	502	235	267	1,308 1 7

Exposing milk to contamination.—Many prosecutions have been instituted and several warnings issued to milk-vendors for general breaches of the regulations for exposing milk to contamination by flies and dust.

Milk standard.—The above tabulated summary shows that 10,088 samples of milk have been procured and analysed, being the product of mixed dairy herds, and milk from milk-vendors, taken under all conditions, and at irregular times; 9,586 samples were found to be in accordance with the required standard, and 502 samples below the standard. Proceedings were taken against 267 vendors, and 235 received warnings.

Foods and drugs other than milk.—1,001 samples of foods and drugs other than milk have been procured and submitted for analysis; 117 were found to be below the required standard; 86 warnings were issued, and 31 prosecutions instituted, resulting in the recovery of £149 6s. in fines and costs.

A large number of samples of drugs have been procured, and particular attention has been given to certain so-called "cure-alls." Legal proceedings have been instituted when deemed necessary.

Advertising of so-called cures and remedies.—Special investigations have been made in connection with advertised remedies, and action taken wherever possible.

Two important prosecutions have been successfully undertaken: Two of the wholesale drug stores were each convicted and fined £10 and costs for selling a drug, Vitadatio, which was falsely described. It was proved that the literature sold with the package and the label bore exaggerated claims, which were false and misleading. Another case worthy of note was a prosecution against the Ozonia Company for selling Ozonia, which was also falsely described. These traders were fined £20 and costs. This article was being sold at 1s. 6d., 3s. 6d., and 7s. 6d. per bottle, whereas the contents of the 7s. 6d. bottle was only worth at the most 3d., and had no medicinal value whatsoever. Some 36,000 bottles have since been seized and the contents poured down the sewer.

Preparation and storage of meat.—Butchers' shops and small-goods premises.—A close supervision has been kept over premises and utensils used in connection with the preparation of meat and meat products for sale, particularly with regard to freedom from contamination by flies and dust or foul odours. Special attention has been paid to the construction of premises used for the purpose, to the cleanliness of the premises and utensils, and to the provision of proper drainage. The appended photographs will show the improvement in premises which has been secured by the operation of the Pure Food Act.

Number of inspections.—704 inspections have been made, and 18 prosecutions were instituted for unclean premises, resulting in traders being fined £60. Many notices to effect improvements have been served on traders, and it was found on reinspection that the necessary improvements had been carried out.

Butchers' cutting-carts.—A special inspection has been made of all cutting-carts trading in the metropolitan district. These carts were found to be clean and satisfactory. They are generally trading in scattered suburban areas, and although much has been said against this system of meat delivery, it would appear that, provided the carts are kept clean, and meat protected from contamination, they serve a useful purpose in supplying meat in outlying districts far from butchers' shops.

Restaurants and refreshment rooms.—Some 591 inspections have been made of premises used as restaurants and refreshment rooms. These inspections include a careful examination of all structural conditions and provision for storage of food, and also of all foods and utensils of trade on the premises at time of inspection. Seven prosecutions have been instituted for breaches of regulations as to cleanliness, &c., and notices have been served requiring improvements.

Bakers and manufacturing pastrycooks.—There have been 369 inspections made of bakeries and pastrycooks' premises. Generally these premises have been found to be clean and satisfactory, and food products used in connection with the trade were, with few exceptions, of good quality.

Bread delivery.—The question of bread delivery by carters has received special attention, and several prosecutions have been instituted against careless carters for failing to protect bread from dust whilst delivering to customers. In many cases it was found that carters were carrying bread on the footboards of carts within a few feet of the horse, and unprotected from dust. Drastic action taken in these cases has had a very beneficial effect.

Inspection of hotels and hotel kitchens.—272 inspections have been made of hotels and kitchens connected therewith, and particular attention has been given to the question of a regular and constant running water supply for the washing of glasses. The regular inspection of hotel premises is one that calls for special attention, and with a larger staff a special officer could be detailed for regular duty in this respect.

Survey of ships' stores and general provisions on troopships.—At the request of the Minister of Defence, arrangements were made for the survey of all foodstuffs on board of transports, and I detailed Inspector Horne to take sole charge of this work. During the year he made a thorough survey of sixty-five troopships in Sydney Harbour, and removed 431 samples of food for analysis.

It was found necessary to institute legal proceedings against four suppliers for selling adulterated food, and they were on conviction fined in the aggregate £52.

Surplus stores received special attention, and on examination it was found necessary to seize and condemn a large quantity of unsound food.

It is pleasing to note that Inspector Horne received every assistance and courtesy from all officers charged with the supervision of transport stores.

General Inspections.

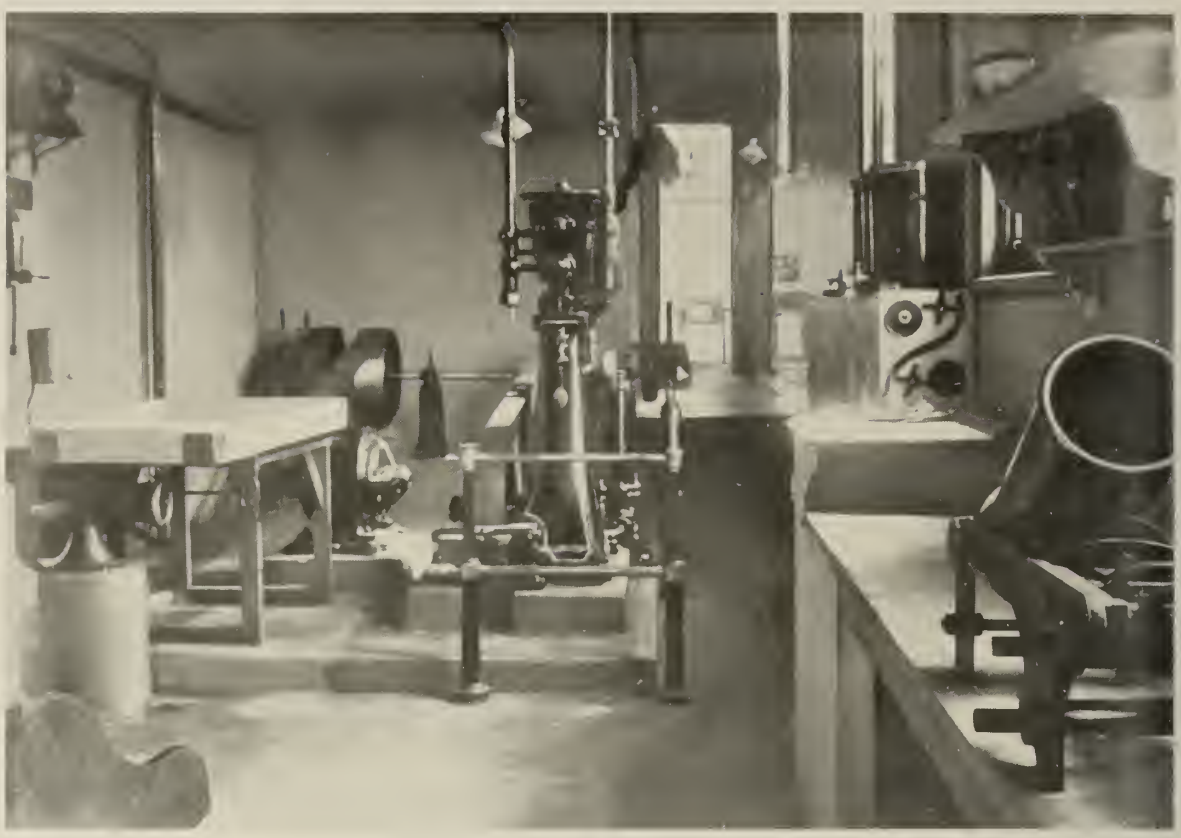
Regular inspections have been made of the premises and utensils used in connection with the preparation and storage of food other than those specially mentioned, viz., manufacturing confectioners, cordial factories, bulk stores, auction rooms, margarine factories, fish shops, grocers' shops, ice-cream factories, jam factories, condiment factories, and many others.

Over 3,561 inspections have been made exclusive of reinspections, and 71 prosecutions instituted for general breaches of the Act and regulations, resulting in negligent traders being fined £284 9s. 6d. Notices and warnings to the number of 665 have been issued in connection with insanitary conditions or structural defects.

Seizure

Modern Butcher's Shop.

Old Style Butcher's Shop. Condemned by Pure Food Officers.



Modern Salting Room, Butcher's Premises.

Old Style Salting Room. Condemned by Pure Food Officers.

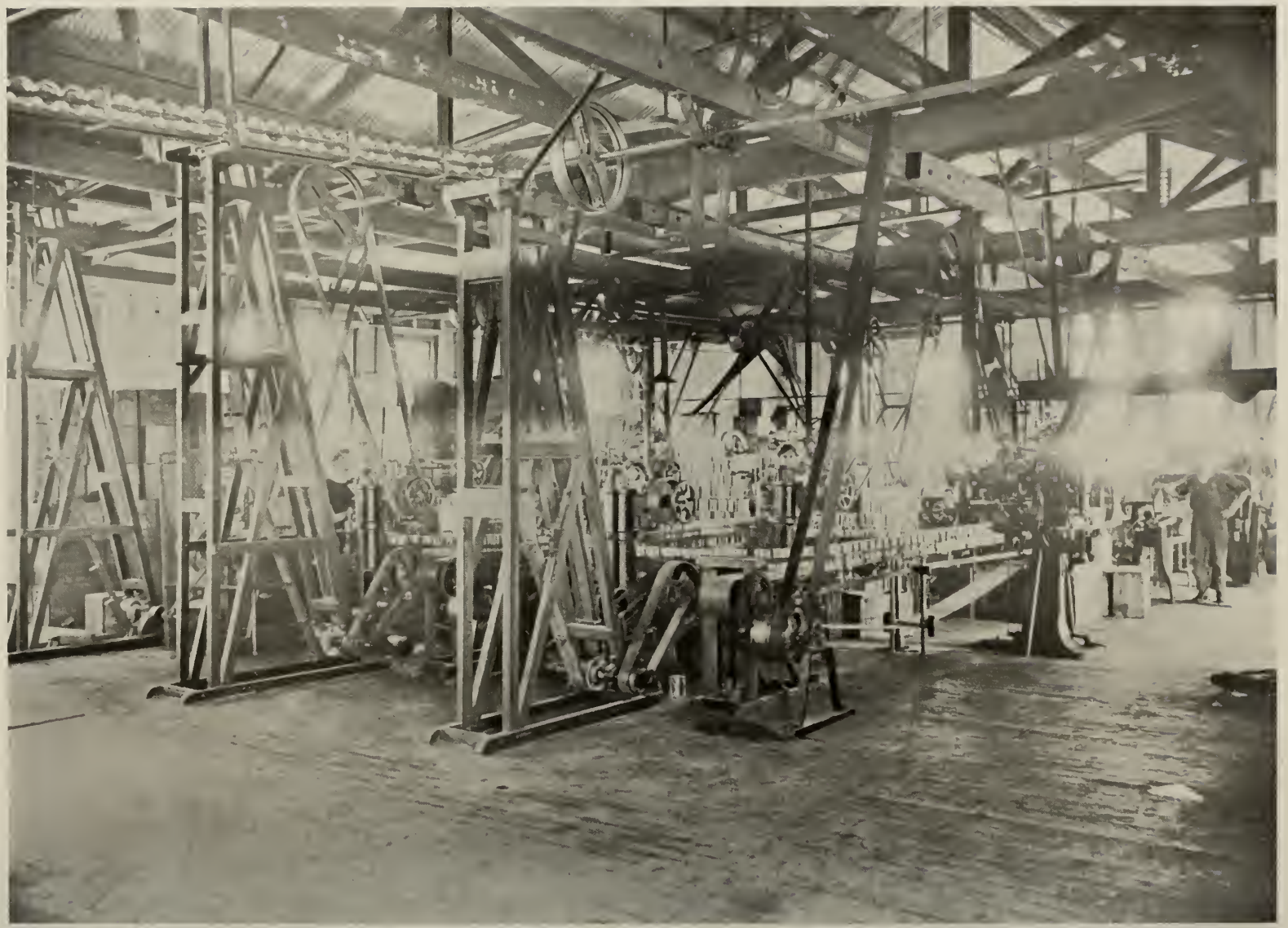
Small Goods Factory. Condemned by Pure Food Officers.

Small Goods Factory. Condemned by Pure Food Officers.

Seizure and Destruction of 36,000 bottles of "Ozonia," falsely described.

Photographs show bottles being emptied, and contents poured down sewer.

Modern Jam Factory. Fruit Room.



Modern Jam Factory. Tin Room.

Modern Confectionery Works.

Seizure and Condemnation of Food Unfit for Use.

The Pure Food Staff have during the year been very diligent in the examination of all classes of food found on traders' premises for sale. This work requires constant attention, combined with tact and special ability, which can only be acquired by practical experience. Examination of the figures submitted in the summary of seizures herewith clearly proves the necessity of this special work.

Brief Summary of Seizures and Condemnations.

Confectionery	1¼ tons.
Fish	6 ,,
Tinned fish	10,671 tins.
Flour	46 tons.
Fruit	195 cases.
Dried fruit	36 tons.
Fruit pulp	4¼ ,,
Jam	743 tins.
Meat	7 cwt.
Preserved meat	138 tins.
Milk, concentrated	99 gallons.
Condensed milk	8,232 tins.
Oatmeal	17 cwt.
Vegetables	5 tons.
Sugar	2 ,,

For a complete list of seizures, see detailed Summary. The whole of the foods were found to be deteriorated, damaged and unfit for use, and it is worthy of note that in nearly every case the judgment of the officer was confirmed by chemical examination. Sixteen traders were convicted of selling food unfit for human consumption and fined £160.

The Pure Food Branch has taken special action in connection with a large number of temporary structures erected in close proximity to the Liverpool Military Camp, presumably used for refreshment rooms. They were found to be insanitary and totally unsuitable for the storage of food. Notices to cease to trade were served under the provisions of the Act, resulting in the removal of a distinct menace to the health of the soldiers.

Medical Practitioners.

Acting under special instructions from the Director-General of Public Health, I have taken drastic action against two medical practitioners, which resulted in their names being removed from the register of medical practitioners in New South Wales.

1. Dr. Sisca, "for infamous conduct," in that he did allow himself to be used as a means of carrying on a business concern, viz., the Ladies' College of Health, which concern had been investigated by a Supreme Court Judge and certain drugs prohibited under the Pure Food Act.
2. Dr. Edgar Caro, guilty of "infamous conduct in a professional respect," in that he did solicit and obtain patients by touting through agents on the Railway Station and elsewhere.

General.

During the year two officers of the Pure Food Staff have enlisted and gone to the front, viz., Inspector William Allison and Charles G. Longworth, and, owing to the loss of their services, much useful work has been suspended.

In June last I was appointed acting manager of the State trawling industry, which position I occupied for some six weeks, but at my own request I was relieved of the position, and returned to my own department.

I submit this report shows that a large and useful amount of good work has been performed, particularly as the staff at present only comprises seven officers, whose duty it is to supervise the preparation, storage and sale of all foods and drugs throughout New South Wales.

I am hoping when the war is over that the matter of considerably increasing the present inadequate staff will receive favourable consideration, which I venture to say is necessary in the public interest.

In conclusion, I wish to express my appreciation of the loyal and zealous manner in which the whole of the Pure Food Staff have performed the duties entrusted to them.

The photos in this report were taken by Inspector Griffin.

ARTHUR KENCH,
Chief Inspector, Pure Food Branch.

BRIEF SUMMARY OF WORK PERFORMED DURING THE YEAR 1915 BY THE DEPARTMENTAL PURE FOOD STAFF.

Milk Supervision.

Number of samples procured and analysed	4,738
Number of samples below standard	313
Number of warnings given	116
Number of prosecutions	196
Amount of fines and costs	£803 17s. 0d.

Foods and Drugs.

Number of samples procured and analysed	572
Number of samples below standard	69
Number of warnings given	38
Number of prosecutions	31
Amount of fines and costs	£149 6s. 0d.

Sale of Deteriorated Food.

Number of prosecutions	16
Amount of fines and costs	£160 2s. 0d.

Inspection of Premises.

Number of premises inspected	3,761
Number of notices served	165
Number of prosecutions	71
Amount of fines and costs	£284 9s. 6d.

General Breaches of Act and Regulations.

Number of breaches	80
Number of warnings	25
Number of prosecutions	55
Amount of fines and costs	£163 15s. 6d.

Summary of Legal Proceedings.

	£ s. d.
Adulterated milk	803 17 0
Adulterated foods and drugs	309 8 0
Unclean premises, &c.	284 9 6
General breaches	163 15 6
Total	£1,561 10 0

COMPARATIVE TABLE showing the number of Samples of Milk taken by Departmental Pure Food Inspectors and Municipal Inspectors in the Metropolitan and Country Districts for the year ended 31st December, 1915.

Metropolitan District.	Population.	No. of Samples taken by Departmental Pure Food Inspectors.					No. of Samples taken by Municipal Inspectors.				
		No. of Samples.	No. Adulterated.	No. of Warnings.	No. of Prosecutions.	Fines and Costs.	No. of Samples.	No. Adulterated.	No. of Warnings.	No. of Prosecutions.	Fines and Costs.
						£ s. d.					£ s. d.
Sydney	.....	1,106	56	23	33	183 14 0	810	.....	12	9	48 8 0
Alexandria	.....	61	2	2	...	.....	56	.....	3	3	17 8 0
Annandale	11,240	59	2	1	1	3 6 0	7	.....	1	...	.....
Ashfield	.....	73	6	5	1	3 6 0	126	.....	4	1	5 6 0
Auburn	.....	.....	.....	.....	...	.....	117	.....	7	1	1 6 0
Balmain	.....	197	1	1	...	.....	149	.....	2	...	.....
Bankstown	2,039	3	.....	.....	...	.....	9	.....	.....	...	.....
Bexley	.....	9	1	1	...	.....	103	.....	5	1	10 3 6
Botany	4,409	22	.....	.....	...	.....	32	.....	2	1	3 6 0
Burwood	9,380	26	2	1	1	2 6 0	46	.....	2	...	.....
Canterbury	.....	15	2	.....	2	10 12 0	60	.....	3	4	18 4 0
Concord	.....	11	.....	.....	...	.....	108	.....	4	5	9 18 0
Darlington	3,816	39	.....	.....	...	.....	.....	.....	.....	...	.....
Drummoyne	.....	31	2	1	1	(Pending)	94	.....	3	3	29 9 0
Enfield	3,444	27	1	.....	1	5 6 0	5	.....	3	1	5 6 0
Erskineville	7,299	34	4	2	2	8 12 0	56	.....	2	1	2 6 0
Glebe	.....	120	2	1	1	2 6 0	275	.....	6	4	14 14 0
Granville	.....	25	2	.....	2	4 12 0	79	.....	4	4	15 4 0
Hunter's Hill	5,013	15	2	.....	2	8 12 0	.....	.....	.....	...	.....
Hurstville	6,533	29	1	1	...	.....	.....	.....	.....	...	.....
Kogarah	.....	28	2	2	...	.....	131	.....	6	9	53 8 0
Lane Cove	3,306	.....	.....	.....	...	.....	7	.....	.....	...	.....
Leichhardt	24,254	47	3	2	1	4 6 0	43	.....	.....	...	.....
Lidcombe	5,418	19	3	1	2	12 12 0	.....	.....	.....	...	.....
Liverpool	.....	20	3	2	1	3 6 0	.....	.....	.....	...	.....
Manly	.....	53	2	2	...	.....	119	.....	3	...	.....
Marrickville	.....	52	5	2	3	19 1 0	237	.....	5	1	5 9 0
Mascot	5,836	6	.....	.....	...	.....	27	.....	2	1	5 6 0
Mosman	13,243	111	9	3	6	36 16 0	34	.....	.....	...	.....

COMPARATIVE TABLE, showing the number of Samples of Milk taken by Departmental Pure Food Inspectors and Municipal Inspectors in the Metropolitan and Country Districts—*continued.*

Metropolitan District.	Population.	No. of Samples taken by Departmental Pure Food Inspectors.					No. of Samples taken by Municipal Inspectors.				
		No. of Samples.	No. Adulterated.	No. of Warnings.	No. of Prosecutions.	Fines and Costs.	No. of Samples.	No. Adulterated.	No. of Warnings.	No. of Prosecutions.	Fines and Costs.
						£ s. d.					£ s. d.
Newtown	.....	176	5	2	3	10 8 0	325	.....	5	4	14 4 0
North Sydney	.....	118	5	3	2	13 12 0	527	.....	11	4	28 18 0
Paddington	.....	125	2	.....	2	10 12 0	150	.....	2	1	2 6 0
Parramatta	12,465	31	5	1	4	15 4 0	120	.....	9	2	2 14 6
Petersham	.....	69	3	.....	3	4 6 0	72	.....	1	1	4 6 0
Prospect and Sherwood.	3,932	.....	.....	.....	...	.....	15	.....	.....	4	6 18 0
Randwick	.....	128	13	.....	13	56 6 0	187	.....	7	2	8 12 0
Redfern	.....	81	2	2	...	.....	433	.....	15	7	24 2 0
Rockdale	.....	22	1	1	...	.....	145	.....	11	2	5 7 0
Ryde	5,281	28	5	3	2	12 12 0	.....	.....	.....	...	.....
Smithfield and Fairfield.	.....	3	.....	.....	...	.....	.....	.....	.....	...	.....
St. Peters	8,410	9	1	.....	1	5 6 0	48	.....	1	1	3 6 0
Strathfield	4,046	7	.....	.....	...	.....	30	.....	.....	...	.....
Vaucluse	1,672	10	.....	.....	...	.....	5	.....	.....	...	.....
Waterloo	10,072	67	2	2	...	.....	9	.....	.....	...	.....
Waverley	.....	101	5	2	3	10 18 0	83	.....	4	...	.....
Willoughby	13,036	37	2	2	...	.....	46	.....	4	2	2 6 0
Woollahra	.....	118	2	2	...	.....	160	.....	5	2	8 2 0
Shires.											
Hornsby	.....	31	2	2	...	.....	.....	.....	.....	...	.....
Kuring-gai	.....	87	17	8	9	36 8 0	.....	.....	.....	...	.....
Warringah	.....	4	1	1	...	.....	.....	.....	.....	...	.....
Total	.....	3,380	186	84	102	486 5 0	5,085	.....	154	81	356 3 0

TABLE showing the number of Samples of Milk taken by Departmental Pure Food Inspectors in the Hunter River Combined Sanitary District, during the year ended 31st December, 1915.

Hunter River.—*continued.* Sanitary District.	Population.	No. of Samples taken by Departmental Pure Food Inspectors.					No. of Samples taken by Municipal and Shire Inspectors.				
		No. of Samples.	No. Adulterated.	No. of Warnings.	No. of Prosecutions.	Fines and Costs.	No. of Samples.	No. Adulterated.	No. of Warnings.	No. of Prosecutions.	Fines and Costs.
Municipalities.						£ s. d.					
Adamstown	.....	.....	.....	.....	...	.....	.....	.....	.....	...	.....
Carrington	.....	.....	.....	.....	...	.....	.....	.....	.....	...	.....
East Maitland	.....	.....	.....	.....	...	.....	.....	.....	.....	...	.....
Greta	.....	.....	.....	.....	...	.....	.....	.....	.....	...	.....
Hamilton	7,908	.....	.....	.....	...	.....	8	.....	.....	...	.....
Lambton	.....	.....	.....	.....	...	.....	.....	.....	.....	...	.....
Merewether	.....	.....	.....	.....	...	.....	9	.....	.....	...	.....
Morpeth	.....	.....	.....	.....	...	.....	.....	.....	.....	...	.....
Newcastle	11,610	182	15	2	13	43 18 0	.....	.....	.....	...	.....
New Lambton	.....	.....	.....	.....	...	.....	.....	.....	.....	...	.....
Plattsburg	.....	.....	.....	.....	...	.....	.....	.....	.....	...	.....
Raymond Terrace.	.....	.....	.....	.....	...	.....	.....	.....	.....	...	.....
Singleton	.....	5	.....	.....	...	.....	22	.....	1	...	.....
Stockton	.....	.....	.....	.....	...	.....	.....	.....	.....	...	.....
Wallsend	.....	.....	.....	.....	...	.....	.....	.....	.....	...	.....
Waratah	.....	.....	.....	.....	...	.....	.....	.....	.....	...	.....
West Maitland	8,210	.....	.....	.....	...	.....	.....	.....	.....	...	.....
Wickham	.....	.....	.....	.....	...	.....	.....	.....	.....	...	.....
Shires.											
Bolwarra	.....	.....	.....	.....	...	.....	.....	.....	.....	...	.....
Cessnock	.....	25	6	6	...	.....	.....	.....	.....	...	.....
Lake Macquarie	.....	.....	.....	.....	...	.....	.....	.....	.....	...	.....
Port Stephens	.....	.....	.....	.....	...	.....	.....	.....	.....	...	.....
Tarro	.....	.....	.....	.....	...	.....	.....	.....	.....	...	.....
Total	.....	212	21	8	13	43 18 0	39	.....	1	...	.....

COMPARATIVE TABLE showing the number of Samples of Milk taken in other Country Municipalities and Shires by Departmental Pure Food Inspectors and Municipal and Shire Inspectors during the year ended 31st December, 1915.

District.	Population.	No. of Samples taken by Departmental Pure Food Inspectors.					No. of Samples taken by Municipal and Shire Inspectors.				
		No. of Samples.	No. Adulterated.	No. of Warnings.	No. of Prosecutions.	Fines and Costs.	No. of Samples.	No. Adulterated.	No. of Warnings.	No. of Prosecutions.	Fines and Costs.
Municipalities.						£ s. d.					£ s. d.
Albury	6,309	36	2	.....	2	7 13 0	.....	.....	.....	...	.....
Ballina	.....	.....	.....	.....	...	.....	3	.....	.....	2	13 7 0
Bathurst	.....	.....	.....	.....	...	.....	62	.....	2	3	12 12 0
Blayney	.....	4	1	.....	1	5 16 6	.....	.....	.....	...	.....
Bowral	.....	7	1	.....	1	1 16 6	.....	.....	.....	...	.....
Camden	.....	4	.....	.....	...	.....	.....	.....	.....	...	.....
Campbelltown	.....	5	.....	.....	...	.....	.....	.....	.....	...	.....
Careoar	.....	2	1	1	...	.....	.....	.....	.....	...	.....
Casino	.....	7	3	.....	3	7 8 0	24	.....	.....	4	6 6 6
Central Illawarra	.....	4	.....	.....	...	.....	.....	.....	.....	...	.....
Cobar	.....	.....	.....	.....	...	.....	10	.....	.....	...	.....
Cooma	2,063	.....	.....	.....	...	.....	3	.....	.....	...	.....
Coonamble	.....	.....	.....	.....	...	.....	10	.....	1	2	8 15 7
Cootamundra	.....	7	.....	.....	...	.....	.....	.....	.....	...	.....
Corowa	.....	3	.....	.....	...	.....	.....	.....	.....	...	.....
Cowra	.....	8	.....	.....	...	.....	20	.....	4	2	6 9 0
Dubbo	.....	12	2	1	1	9 9 0	.....	.....	.....	...	.....
Dungog	.....	99	16	6	10	15 9 0	.....	.....	.....	...	.....
Dundas	.....	.....	.....	.....	...	.....	.....	.....	.....	...	.....
Forbes	.....	6	3	.....	3	23 19 0	5	.....	1	...	.....
Glen Innes	.....	9	1	.....	1	2 6 0	10	.....	1	...	.....
Goulburn	.....	36	2	2	...	.....	95	.....	2	...	.....
Grafton	.....	.....	.....	.....	...	.....	14	.....	1	...	.....
Inverell	.....	16	.....	.....	...	.....	26	.....	3	...	.....
Junee	2,531	2	2	.....	2	2 6 0	7	.....	.....	5	8 5 0
Katoomba	.....	.....	.....	.....	...	.....	53	.....	1	7	40 17 0
Kempsey	2,862	6	.....	.....	...	.....	5	.....	.....	...	.....
Kiama	.....	6	.....	.....	...	.....	.....	.....	.....	...	.....
Lismore	.....	.....	.....	.....	...	.....	110	.....	10	6	20 2 0
Lithgow	8,196	.....	.....	.....	...	.....	33	.....	2	2	7 7 0
Mittagong	976	.....	.....	.....	...	.....	3	.....	.....	...	.....
Moree	2,931	15	3	.....	3	4 19 0	4	.....	.....	...	.....
Moss Vale	1,474	3	.....	.....	...	.....	.....	.....	.....	...	.....
Mullumbimby	.....	.....	.....	.....	...	.....	1	.....	.....	...	.....
Murrumbidgee	.....	6	2	.....	2	4 12 0	.....	.....	.....	...	.....
Murrumburrah	.....	12	2	2	...	.....	.....	.....	.....	...	.....
Murwillumbah	.....	.....	.....	.....	...	.....	4	.....	.....	...	.....
Muswellbrook	1,861	.....	.....	.....	...	.....	5	.....	.....	...	.....
Narrabri	2,514	5	.....	.....	...	.....	.....	.....	.....	...	.....
Narrandera	2,374	7	.....	.....	...	.....	.....	.....	.....	...	.....
North Illawarra	.....	10	3	.....	3	1 19 0	.....	.....	.....	...	.....
Orange	4,220	66	9	.....	9	33 5 6	.....	.....	.....	...	.....
Parkes	.....	10	.....	.....	...	.....	18	.....	.....	...	.....
Penrith	3,682	19	2	.....	2	10 12 0	.....	.....	.....	...	.....
Pieton	.....	6	.....	.....	...	.....	.....	.....	.....	...	.....
Queanbeyan	1,273	6	1	.....	1	3 6 0	.....	.....	.....	...	.....
Quirindi	2,240	14	10	3	7	27 1 0	.....	.....	.....	...	.....
South Grafton	.....	.....	.....	.....	...	.....	.....	.....	.....	...	.....
St. Mary's	.....	2	.....	.....	...	.....	.....	.....	.....	...	.....
Tamworth	7,145	59	6	.....	6	31 8 6	.....	.....	.....	...	.....
Tarce	.....	5	.....	.....	...	.....	.....	.....	.....	...	.....
Temora	2,784	11	1	.....	1	1 16 0	18	.....	.....	...	.....
Wagga	.....	49	1	1	...	.....	65	.....	6	1	1 6 0
Waleha	.....	3	1	1	...	.....	.....	.....	.....	...	.....
Wellington	.....	41	9	2	7	28 12 6	5	.....	.....	...	.....
Werris Creek	.....	3	3	1	2	5 2 6	.....	.....	.....	...	.....
Windsor	.....	3	.....	.....	...	.....	10	.....	1	3	17 8 6
Wingham	.....	3	.....	.....	...	.....	.....	.....	.....	...	.....
Wollongong	4,660	17	.....	.....	...	.....	.....	.....	.....	...	.....
Yass	2,136	.....	.....	.....	...	.....	1	.....	.....	...	.....
Young	.....	.....	.....	.....	...	.....	44	.....	.....	...	.....
Shires.											
Abercrombie	.....	.....	.....	.....	...	.....	.....	.....	.....	...	.....
Bellingen	.....	1	1	.....	1	3 6 0	.....	.....	.....	...	.....
Berrigan	.....	.....	.....	.....	...	.....	.....	.....	.....	...	.....
Bland	.....	2	1	.....	1	1 16 0	.....	.....	.....	...	.....
Blaxland	.....	7	.....	.....	...	.....	.....	.....	.....	...	.....
Blue Mountain	.....	6	3	.....	3	(Not Served.)	7	.....	.....	...	.....
Bulli	.....	12	1	.....	1	0 11 0	51	.....	1	1	5 6 0
Byron	.....	2	2	2	...	.....	.....	.....	.....	...	.....
Coolamon	.....	.....	.....	.....	...	.....	.....	.....	.....	...	.....
Culcairn	.....	2	.....	.....	...	.....	.....	.....	.....	...	.....
Dalgety	.....	4	.....	.....	...	.....	.....	.....	.....	...	.....
Dorrigo	.....	12	2	1	1	9 9 0	.....	.....	.....	...	.....
Erina	.....	5	.....	.....	...	.....	.....	.....	.....	...	.....
Harwood	.....	.....	.....	.....	...	.....	.....	.....	.....	...	.....
Hastings	.....	1	1	.....	1	5 16 0	.....	.....	.....	...	.....
Port Macquarie	.....	4	2	.....	2	11 12 0	.....	.....	.....	...	.....
Rylstone	.....	4	.....	.....	...	.....	.....	.....	.....	...	.....
Sutherland	.....	17	2	.....	2	5 6 0	.....	.....	.....	...	.....
Tweed	.....	7	.....	.....	...	.....	.....	.....	.....	...	.....
Wingadee	.....	.....	.....	.....	...	.....	.....	.....	.....	...	.....
Wellond lly	.....	1	.....	.....	...	.....	.....	.....	.....	...	.....
Total	.....	746	105	24	81	273 14 0	726	.....	36	38	148 1 7

TABLE showing the Samples of Food, other than Milk, taken by Departmental Pure Food Inspectors during the year ended 31st December, 1915.

Article.	No. of Samples.	No. below Standard.	No. of Warnings.	No. of Prosecutions.	Amount of Fines and Costs.
					£ s. d.
Baking powder	2	...	...	...	.....
Beeswax	1	...	...	...	.....
Brandy	3	...	...	...	.....
Bread	1	...	...	...	.....
Butter	65	...	...	...	.....
Camphorated oil	24	2	...	2	6 2 6
Castor oil	9	...	...	...	.....
Cheese	28	...	...	...	.....
Confectionery	4	...	...	...	.....
Coffee, coffee and chicory	13	3	...	3	10 18 0
Cordials	26	7	4	3	10 18 0
Cream	1	...	...	...	.....
Cream of tartar	5	2	1	1	3 6 0
Custard powder	1	...	...	...	.....
Dripping	4	...	...	...	.....
Drugs	105	23	17	6	52 6 6
Edible oils	23	...	...	...	.....
Egg powder	1	...	...	...	.....
Essences	8	2	1	1	2 9 0
Eucalyptus oil	4	...	...	...	.....
Fig coffee	1	...	...	...	.....
Fish	3	...	...	...	.....
Flour	3	...	...	...	.....
Fruit (preserved)	3	...	...	...	.....
Ginger	2	...	...	...	.....
Honey	5	...	...	...	.....
Ice cream	24	6	...	6	19 16 0
Infants' food	4	...	...	...	.....
Jam	11	...	...	...	.....
Lard	3	...	...	...	.....
Magnesia	5	1	...	1	4 6 0
Margarine	23	...	...	...	.....
Meat	1	...	...	...	.....
Milk (condensed and concentrated)	5	2	...	2	1 8 0
Ointment	11	...	...	...	.....
Pepper	4	...	...	...	.....
Pickles	2	...	...	...	.....
Rum	9	2	...	2	6 12 0
Salt	1	...	...	...	.....
Sauce	14	1	...	1	2 16 0
Sausages	24	2	2	...	.....
Soap	42	15	12	3	8 8 0
Soup	1	...	...	...	.....
Sundries	11	...	...	...	.....
Tomatoes (peeled)	1	...	...	...	.....
Vegetables (preserved)	3	...	...	...	.....
Vinegar	21	1	1	...	.....
Whisky	5	...	...	...	.....
Wine	2	...	...	...	.....
Total	572	69	38	31	149 6 0

TABLE showing the nature of Food Samples taken by Departmental Pure Food Inspectors from Transports and Troopships during the year ended 31st December, 1915.

Food.	No. of Samples.	No. below Standard.	Food.	No. of Samples.	No. below Standard.
Arrowroot	1	.....	Margarine	11	.....
Baking powder	5	1	Mustard	11	4
Barley	3	1	Oatmeal	17	.....
Bread	3	1	Oil (edible)	1	.....
Butter	35	8	Pepper and pepper mixture	46	4
Chocolate	2	.....	Pickles	1	.....
Cocoa	5	.....	Rice	11	.....
Coffee, and coffee and chicory	74	12	Sugar	14	3
Condensed milk	23	5	Tea	41	.....
Curry powder	1	.....	Vegetables (dried and preserved)	5	.....
Dried fruits	7	3	Vinegar	33	.....
Flour	37	4			
Jam	30	1			
Lime juice	12	1	Total	429	43

TABLE showing the nature and quantities of Foods Seized and Destroyed by Departmental Pure Food Inspectors during the year ended 31st December, 1915.

Goods.	Quantity.	Reason destroyed.	Prosecutions.	Amount of Fines and Costs.
				£ s. d.
Asparagus	21 tins	Deteriorated	.....	.....
Baking powder	145 tins	,, ...	.....	.....
Barley	2 cwt. 1 qr. 4 lb.	,, ...	.....	.....
Biscuits	10 cwt.	,, ...	.....	.....
Cake	12 lb.	,, ...	.....	.....
Cheese	9 cwt. 3 qrs. 8 lb. & 63 tins	,, ...	.....	.....
Chocolate and milk	18 tins	,, ...	.....	.....
Coffee and Chicory and Cocoa	2 cwt. 4 lb.	,, ...	.....	.....
Coffee essence	56 bottles	,, ...	.....	.....
Confectionery	1 ton 5 cwt. 2¾ qrs.	,, ...	.....	.....
Cordials	67 bottles, 105 packets	,, ...	.....	.....
Custard powder	116 tins	,, ...	.....	.....
Drugs	13 bottles	,, ...	.....	.....
Fish	5 tons 15 cwt. 1 qr. 9 lb.	,, ...	.....	.....
Fish (tinned)	10,671 tins	,, ...	2	16 12 0
Flour	40 tons 12 cwt.	,, ...	.....	.....
Fruit	195 cases	,, ...	2	11 12 0
Fruit (dried and preserved)	36 tons 1 qr. 26 lb., 195 cases.	,, ...	9	86 0 0
Fruit (pulp)	4 tons 4½ cwt.	,, ...	.....	.....
Ginger	49 tins	,, ...	.....	.....
Hams	4	,, ...	.....	.....
Hops	7 packets	,, ...	.....	.....
Ice cream	1 gallon	,, ...	.....	.....
Jam	743 tins	,, ...	.....	.....
Jam (pulp)	1 cwt.	,, ...	.....	.....
Macaroni	12 packets	,, ...	.....	.....
Margarine	6 boxes and 4 lb.	,, ...	2	35 12 0
Meat	7 cwt. 3 qrs. 1 lb.	,, ...	.....	.....
Meat (preserved)	138 tins	,, ...	.....	.....
Milk (concentrated)	99 gallons	,, ...	.....	.....
Milk (condensed)	8,232 tins	,, ...	.....	.....
Milk (foods)	29 tins	,, ...	.....	.....
Mixed Groceries	2 cwt. 3 qrs. 10 lb.	,, ...	.....	.....
Muscatels	40 lb.	,, ...	.....	.....
Mustard	288 tins	,, ...	.....	.....
Oatmeal	17 cwt. 3 qrs. 4 lb.	,, ...	.....	.....
Oil	10 bottles	,, ...	.....	.....
Peanuts	1 cwt.	,, ...	.....	.....
Pepper	5 lb.	,, ...	.....	.....
Pickles	46 bottles	,, ...	.....	.....
Pickles	7 barrels	,, ...	.....	.....
Sago	5 cwt.	,, ...	.....	.....
Salt	1 cwt. 8 lb.	,, ...	.....	.....
Sauce	48 bottles	,, ...	.....	.....
Soups	45 tins	,, ...	.....	.....
Sweet corn	10 tins	,, ...	.....	.....
Sugar	2 tons 7 cwt.	,, ...	.....	.....
Sundries	5 cwt. 1 qr.	,, ...	.....	.....
Tea	3 cwt.	,, ...	.....	.....
Toffee	1 box	,, ...	.....	.....
Tomato pulp	3 cwt. 5 qrs. 1 lb.	,, ...	.....	.....
Vegetables	5 tons 1cwt. 3qrs. 15lb., 17 cases.	,, ...	.....	.....
Vegetables (dried and preserved)	1 ton 13 cwt. 24 lb. 276 tins	,,	1	10 6 0
Total			16	£160 2 0

TABLE showing the Inspections made during the year ended 31st December, 1915, by the Departmental Pure Food Inspectors of Premises used for the preparation, storage, or sale of Food in the Metropolitan District.

Metropolitan District.	Bakers and Pastrycooks.	Butchers.	Confectioners.	Cordial and Aerated Water Factories.	Dairies.	Dairy Produce.	Fish and Oyster.	Fruiterers and Greengrocers.	Grocers.	Hotels.	Jam, Sauce and Pickle Factories.	Margarine Factories.	Milk Vendors.	Refreshment-rooms and Restaurants.	Small goods.	Stores.	Various.	No. of Notices Served.	No. of Prosecutions	Amount of Fines and Costs.	Total.
																				£ s. d.	
Sydney	15	61	47	2	...	...	74	64	71	128	2	...	13	206	58	...	12	246	7	30 2 0	843
Alexandria	...	3	...	...	...	...	3	4	13	...	...	...	...	2	4	...	...	5	...	.....	29
Annandale	3	8	...	1	...	...	5	5	8	...	2	...	...	1	4	...	1	8	4	16 4 0	38
Ashfield	8	40	1	...	...	1	7	10	11	...	...	...	...	2	18	...	...	25	2	7 12 0	100
Auburn	6	15	1	...	...	...	4	5	...	...	...	...	...	5	8	...	...	4	...	.....	44
Balmain	18	21	4	1	...	...	17	4	2	...	...	...	...	8	14	...	1	13	1	5 6 0	90
Bankstown	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	.....	1
Bexley	...	3	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	1	5 6 0	4
Burwood	6	7	...	...	...	...	1	1	...	...	...	...	...	3	...	...	...	4	...	.....	18
Canterbury	8	11	10	...	...	...	4	2	1	...	...	...	...	3	6	...	...	3	...	.....	45
Concord	1	2	4	...	...	...	...	1	1	1	...	...	...	1	1	...	...	...	...	.....	12
Darlington	...	2	4	...	2	...	4	1	3	...	1	...	...	...	2	...	...	2	...	.....	19
Drummoyne	7	...	...	...	...	...	1	...	1	...	...	...	...	1	3	...	...	4	...	.....	20
Erskineville	3	5	2	...	...	...	3	5	6	...	3	...	...	...	...	6	...	3	1	3 6 0	33
Glebe	...	5	7	...	...	...	3	7	7	...	5	...	1	9	6	...	...	3	...	.....	50
Granville	1	3	...	...	...	...	2	...	...	...	...	...	...	5	2	1	1	...	...	.....	15
Hornsby Shire	...	6	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	.....	8
Hunter's Hill	3	8	...	...	...	...	...	3	...	...	...	...	...	1	2	...	...	7	...	.....	17
Hurstville	4	11	10	...	...	...	2	7	8	...	...	...	...	2	4	...	...	3	2	8 12 0	48
Kogarah	4	7	...	...	...	...	1	...	...	...	...	...	...	1	3	...	...	1	...	.....	16
Kuring-gai Shire	1	6	...	...	...	...	...	...	2	...	...	...	...	1	...	...	...	5	1	3 6 0	10
Leichhardt	7	46	1	...	...	...	5	3	7	...	1	...	...	...	7	...	3	6	2	6 6 0	80
Liverpool	1	...	...	...	...	...	...	...	...	...	...	...	...	24	...	1	...	23	1	7 6 0	26
Manly	5	13	...	...	...	...	4	...	1	...	1	...	...	8	11	1	1	10	1	2 6 0	45
Marrickville	20	24	6	1	...	...	9	11	5	...	1	...	1	1	7	...	1	9	1	3 6 0	87
Mosman	2	5	2	1	...	...	1	1	4	...	...	...	...	10	2	...	...	9	...	.....	28
Newtown	5	14	11	1	...	...	11	21	26	...	2	...	1	4	21	...	3	17	2	5 12 0	120
North Sydney	9	9	...	...	...	...	4	1	2	...	1	...	...	1	5	...	1	9	1	2 6 0	33
Paddington	6	10	...	...	...	...	11	15	5	...	1	...	...	7	3	...	...	12	3	11 18 0	58
Parramatta	6	11	...	...	...	...	6	...	...	...	...	...	...	8	1	...	...	9	1	2 6 0	32
Petersham	8	8	7	...	...	...	5	12	6	...	5	...	3	2	4	...	...	11	...	.....	60
Randwick	7	9	3	...	...	...	2	12	4	1	...	...	...	12	6	...	...	10	2	4 2 0	56
Redfern	2	15	7	2	...	...	13	2	1	...	...	1	...	11	14	...	...	8	1	1 6 0	68
Rockdale	1	11	8	...	...	...	2	8	5	...	...	...	1	...	4	...	...	7	1	5 6 0	40
Ryde	...	2	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	.....	3
Smithfield and Fairfield	1	1	1	...	...	...	...	4	...	...	...	...	...	...	1	...	...	3	...	.....	8
St. Peters	2	6	9	2	...	...	4	7	9	...	...	...	1	...	3	...	...	9	...	.....	43
Strathfield	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	.....	1
Vaucluse	...	...	...	...	...	...	...	...	...	...	...	...	5	...	...	...	...	...	...	.....	5
Warringah Shire	1	4	...	...	...	...	1	1	7	...	...	...	...	5	...	...	...	6	...	.....	19
Waterloo	2	13	...	1	...	...	5	2	9	...	3	...	...	...	5	...	2	10	2	2 0 0	42
Waverley	4	8	14	...	...	...	5	2	4	...	...	...	4	10	4	...	...	7	1	15 6 0	55
Willoughby	6	13	5	...	...	...	8	...	10	...	...	...	1	1	3	...	...	5	...	.....	47
Woollahra	2	9	...	...	...	...	2	...	10	...	...	...	...	...	5	...	...	4	1	10 6 0	28
Total	186	463	164	12	2	1	230	221	251	130	28	1	28	451	241	9	26	532	39	159 6 0	2,444

TABLE showing the Inspections made during the year ended 31st December, 1915, by the Departmental Pure Food Inspectors of Premises used for the preparation, storage, or sale of Food in Country Districts.

Country Districts.	Bakers and Pastrycooks.	Butchers.	Confectioners.	Cordial and Aerated Water Factories.	Dairies.	Dairy Produce.	Fish and Oyster.	Fruiterers and Greengrocers.	Grocers.	Hotels.	Jam, Sauce and Pickle Factories.	Margarine Factories.	Milk Vendors.	Refreshment-rooms and Restaurants.	Small goods.	Stores.	Various.	No of Notices Served.	No. of Prosecutions.	Amount of Fines and Costs.	Total.
																				£ s. d.	
Albury	2	4	...	...	...	...	2	...	...	...	...	...	...	4	...	4	...	3	...	.....	16
Armidale	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...	2	...	1	1	10 16 6	4
Bannockburn Shire	1	1	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...	.....	4
Bellingen Shire	4	5	...	1	...	...	1	...	...	...	...	...	...	1	...	4	...	3	...	.....	16
Bland Shire	2	3	...	1	...	...	...	...	...	12	...	...	...	2	...	5	...	6	1	4 6 0	25
Blayney	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	.....	2
Blaxland Shire	5	4	...	...	...	...	...	...	...	...	...	...	...	2	1	7	...	6	...	.....	19
Boree Shire	5	4	...	1	...	...	...	...	...	2	...	...	...	3	...	1	...	2	1	3 16 6	16
Bowral	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	.....	1
Bulli Shire	...	2	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	4	...	.....	4
Cabramatta	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	.....	1
Camden	4	4	...	1	...	...	3	...	...	4	...	...	...	...	...	4	...	6	1	5 4 6	20
Campbelltown	2	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	...	.....	4
Carcoar	1	2	...	1	...	...	...	2	...	1	...	...	...	1	...	3	...	3	...	.....	11
Casino	...	4	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	2	...	.....	5
Cessnock	3	6	...	...	...	...	...	...	2	...	...	...	...	4	...	...	...	3	1	5 6 0	15
Colo Shire	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	.....	2
Cootamundra	4	3	...	...	...	...	1	3	...	...	...	...	...	2	1	1	...	6	1	1 16 0	15
Corowa	7	6	...	2	...	...	1	...	...	2	...	...	...	...	...	16	...	5	1	4 6 0	34
Cowra	4	5	...	...	...	...	1	5	...	1	...	...	...	1	...	1	1	8	...	.....	19
Culcairn Shire	8	8	...	...	...	...	2	...	1	...	...	...	...	2	...	11	...	2	1	3 6 0	32
Dorrigo Shire	5	6	...	1	...	...	2	...	1	...	...	...	...	7	...	10	...	5	...	.....	32
Dubbo	...	...	...	...	...	...	1	3	...	...	...	...	...	3	...	11	...	...	...	.....	18
Dungog	2	4	...	...	...	...	...	...	2	...	...	...	...	4	...	2	...	3	1	3 6 0	14
Erina Shire	1	2	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	4	...	.....	4
Forbes	6	7	...	...	...	...	2	1	...	...	1	...	...	1	...	11	...	7	1	3 16 6	29
Gilgandra Shire	2	3	1	1	...	...	1	...	...	...	...	...	...	...	...	2	...	3	...	.....	10
Glen Innes	5	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	1	2	9 12 0	7
Goulburn	3	5	...	2	...	...	3	2	...	...	...	...	...	1	3	5	...	...	...	.....	24
Gundagai	2	4	...	...	...	...	1	...	...	...	...	...	...	5	...	4	...	2	...	.....	16
Gunnedah	...	...	...	...	...	...	...	...	...	...	...	...	...	4	...	...	...	...	...	.....	4
Hastings Shire	3	...	...	1	...	...	...	...	...	...	...	...	...	2	...	7	...	2	...	.....	13
Henty	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	.....	2
Illabo Shire	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	.....	1
Inverell	6	3	...	2	...	...	1	...	...	...	1	...	...	...	...	1	...	8	2	6 13 0	14
Junee	3	2	...	1	...	...	...	...	...	...	...	...	...	2	...	...	...	5	...	.....	8
Kempsey	3	2	...	1	...	...	1	...	...	...	...	...	...	2	...	...	...	2	...	.....	9
Kiama	2	2	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	2	...	.....	5
Lake Macquarie Shire	1	2	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	1	...	.....	5
Lidcombe	...	9	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	.....	9
Lismore	6	6	3	3	...	...	2	...	...	...	...	...	...	7	...	12	1	9	2	2 2 0	40
Liverpool Plains Shire	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	2	...	.....	3

INSPECTIONS made by the Departmental Pure Food Inspectors—Country Districts—*continued.*

Country Districts.	Bakers and Pastrycooks.	Butchers.	Confectioners.	Cordial and Aerated Water Factories.	Dairies.	Dairy Produce.	Fish and Oyster.	Fruiterers and Greengrocers.	Grocers.	Hotels.	Jam, Sauce and Pickle Factories.	Margarine Factories.	Milk Vendors.	Refreshment-rooms and Restaurants.	Small goods.	Stores.	Various.	No. of Notices Served.	No. of Prosecutions.	Amount of Fines and Costs.	Total.
																				£ s. d.	
Macquarie Shire	1	1	...	...	...	...	...	...	1	2	...	...	...	...	...	2	...	6	...	.....	7
Manning Shire	5	2	...	...	...	...	...	...	1	4	...	...	...	...	...	10	...	5	2	7 12 0	22
Mittagong Shire	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	.....	1
Moree	3	5	1	...	...	...	2	...	...	...	...	...	...	4	...	3	...	...	...	.....	18
Moss Vale	3	3	...	...	...	...	2	...	...	...	...	...	...	...	...	3	...	1	...	.....	11
Murrumbidgee Irrigation Area	3	2	...	...	...	...	1	...	...	...	...	...	...	3	...	3	...	2	1	3 6 0	12
Murrumburrah	3	4	...	...	...	...	3	...	...	...	...	...	1	2	...	...	...	3	...	.....	13
Murrurundi	1	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	2	...	.....	3
Murwillumbah	3	3	...	...	...	...	2	...	...	...	...	...	...	4	...	1	...	5	...	.....	13
Narrabri	3	4	1	2	...	...	...	...	...	...	...	...	...	6	...	1	...	3	...	.....	17
Narrandera	1	2	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	.....	4
Narromine	6	4	9	2	...	...	...	...	...	...	...	...	...	2	...	8	...	2	1	1 16 6	31
Nepean Shire	...	1	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	3	1	5 6 0	3
Newcastle	1	15	5	...	...	1	20	19	3	...	3	...	4	19	3	19	12	20	4	12 10 0	124
Nowra	4	3	...	2	...	1	1	...	...	...	...	...	...	3	...	1	...	4	...	.....	15
Orange	...	...	4	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	4 6 0	5
Parkes	7	5	...	2	...	...	...	5	1	5	...	...	...	7	...	6	...	13	2	9 5 0	38
Penrith	1	...	...	...	...	...	...	...	...	...	...	...	...	2	...	2	...	1	...	.....	5
Picton	1	3	1	...	...	...	...	...	...	3	...	...	...	...	...	...	...	1	...	.....	8
Port Macquarie	2	2	...	2	...	...	...	...	...	...	...	...	...	2	...	7	2	5	1	6 6 0	17
Queanbeyan	4	9	...	5	...	...	...	...	3	...	...	...	...	2	...	3	...	1	...	.....	26
Richmond	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	.....	1
Rylstone Shire	2	1	...	1	...	...	...	...	...	...	...	...	...	...	...	4	...	1	...	.....	8
Severn Shire	1	1	...	...	...	...	...	2	...	1	...	...	...	...	...	3	...	2	...	.....	8
St. Mary's	1	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...	.....	3
Taree	3	4	...	1	...	2	1	2	...	...	...	...	...	...	...	3	...	2	...	.....	16
Temora	4	4	...	2	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...	.....	11
Tenterfield	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	1	...	.....	2
Terania Shire	...	1	...	...	...	...	...	...	...	...	1	...	...	2	...	1	...	1	...	.....	5
Tweed Shire	2	1	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...	3	...	.....	6
Wagga Wagga	3	2	...	...	...	...	3	...	...	...	...	...	...	1	...	...	...	1	1	1 16 0	9
Wallendbeen	1	1	...	...	...	...	...	1	...	...	...	...	...	...	...	2	...	...	...	.....	5
Waugoola Shire	...	2	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	2	...	.....	3
Wellington	...	14	...	...	...	...	3	2	1	...	...	...	...	...	12	6	...	5	...	.....	38
West Maitland	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	.....	1
Wingham	2	3	...	...	...	...	1	...	2	...	...	...	...	...	...	6	...	...	...	.....	14
Wollondilly Shire	1	3	...	...	...	...	...	...	...	2	...	...	...	...	...	2	...	1	...	.....	8
Wollongong	2	5	...	...	...	...	1	2	...	...	...	...	...	5	...	1	...	2	2	8 12 0	16
Wyalong	4	1	...	...	...	...	...	...	...	3	...	...	...	1	...	2	...	2	...	.....	11
Yanko Shire	1	2	...	...	...	...	...	...	1	...	...	...	...	6	...	...	...	5	...	.....	10
Yarrowlumla Shire	2	4	...	1	...	...	...	...	...	2	...	...	...	...	...	8	...	1	...	.....	17
Country Total	183	242	25	41	...	6	72	50	21	46	7	...	6	140	20	239	19	133	32	125 3 6	1,117
Metropolitan Total	186	463	164	12	2	1	230	221	251	130	28	1	28	451	241	9	26	532	39	159 6 0	2,444
Grand Total	369	705	189	53	2	7	302	271	272	176	35	1	34	591	261	248	45	665	71	284 9 6	3,561

SUMMARY of Work performed by Departmental Pure Food Inspectors under the Pure Food Act, 1908, from 1st October, 1909, to 31st December, 1915.

Milk.

Year	No. of Samples Collected.	No. below Standard.	No. of Prosecutions.	Amount of Fines and Costs.
				£ s. d.
1909-10	2,155	279	185	860 5 7
1911	1,963	248	132	829 9 6
1912	2,990	436	210	1,124 4 0
1913	3,519	322	144	709 17 0
1914	3,980	291	189	837 11 0
1915	4,338	312	196	803 17 0
	18,945	1,888	1,056	£5,165 4 1

Foods (other than Milk) and Drugs.

Year.	No. of Samples Collected.	No. below Standard.	No. of Prosecutions.	Amount of Fines and Costs.
				£ s. d.
1909-10	391	49	41	150 4 0
1911	830	245	171	451 0 6
1912	593	71	71	148 17 0
1913	641	107	72	174 12 6
1914	734	135	71	321 4 0
1915	572	69	31	149 6 0
	3,761	676	457	£1,395 4 0

SUMMARY of Work performed—*continued.*

Year.	No. of Inspections.	No. of Prosecutions.	Amount of Fines and Costs.	Year.	No. of Inspections.	No. of Prosecutions.	Amount of Fines and Costs.
	Premises Inspected.				*General Breaches of Act and Regulations.*		
			£ s. d.				£ s. d.
1909-10	802	46	94 14 6	1909-10	47	36	63 9 0
1911	929	50	235 12 0	1911	67	26	57 11 0
1912	982	88	305 1 2	1912	72	60	114 8 6
1913	2,600	93	382 7 6	1913	65	40	127 0 6
1914	3,953	152	638 15 6	1914	71	42	167 7 6
1915	3,561	71	284 9 6	1915	80	55	163 15 6
	12,827	500	£1,941 0 2		402	259	£693 12 0

Summary of Legal Proceedings.

Year.	No. of Prosecutions.	Amount of Fines and Costs.
		£ s. d.
1 Oct., 1909-31 Dec., 1910	281	1,168 13 1
1911	379	1,573 13 0
1912	439	1,693 10 8
1913	349	1,393 17 6
1914	454	1,964 18 0
1915	369	1,561 10 0
Total	2,271	£9,356 2 3

DAIRIES SUPERVISION ACT, 1901.

CATTLE SLAUGHTERING AND DISEASED ANIMALS AND MEAT ACT, 1902.

REPORT by the Chief Veterinary Inspector upon the work of the Veterinary Branch of the Department of Public Health for the year ended 31st December, 1915.

Staff.

C. J. VYNER, M.R.C.V.S., Chief Veterinary Inspector, stationed at Sydney.

R. C. BELL, M.R.C.V.S., Assistant „ „ „ „

T. V. Blomfield, Assistant to Veterinary Inspectors, stationed at Illawarra.

E. P. Foster, Assistant to Veterinary Inspectors, stationed at Hastings and Manning River.

A. Siddens, Dairy Inspector, stationed outside Metropolitan District.
W. A. Mackie, „ Lower Hunter District.
J. Yeo, „ Moss Vale District.
J. G. R. Bocking, „ Upper Hunter District.
J. S. Lyons, „ Clarence River Districts.
S. C. Flood, „ Richmond River Districts.
J. Lacey, „ Quirindi to Queensland Border.
R. R. A. Faunce, „ Tweed and Brunswick Districts.
W. G. Johnston, „ Casino and Kyogle Districts.
F. J. Madden, „ Metropolitan District, relieving Veterinary Inspector Bell, absent on Military Duties.
V. M. Nevell, „ Bega and Monaro Districts.
F. J. Page, „ Macleay and Nambucca Rivers Districts.

The Dairies Supervision Act has been in force since 1886, when the staff consisted of the Chief Veterinary Inspector to the Board of Health and two lay Inspectors. The progress made in the dairying industry is indicated by the additional appointments made from time to time to the inspectorial staff. In 1905 the staff comprised a Chief Inspector and six lay Inspectors. Since then additions have been made as indicated above, the staff now consisting of a Chief Veterinary Inspector, an Assistant Veterinary Inspector, and fourteen Dairy Inspectors.

In 1901 the Act was consolidated with Part IX of the Public Health Act as the Dairies Supervision Act, 1901. As originally passed in 1886, the Act only applied to the Metropolitan Police District, but during the twenty-eight years which have since elapsed it has been extended, by proclamation, to a large portion of the State; and at present the whole of the Eastern and Central Divisions—as defined by the Crown Lands Act—as well as most of the important inland dairying centres, have been brought under the operation of its clauses. Further extensions are made as they become necessary from time to time by reason of increased population. I have at intervals submitted proposed regulations to the Dairies Supervision Act, 1901, to enable the better working of that Act, by giving Inspectors more power to enter on premises, to muster and inspect cattle, to compel certain structural improvements to be carried out, and the strict observance of sanitary conditions. Certain of these matters, at the present time, can only be regarded as desirable. The original Act gave no power to frame regulations of this nature, and it has been found necessary to have amendments made to meet these requirements.

The dairying districts have been divided as much as possible to give each Inspector an equal amount of work, but my staff is still far too small numerically to carry out inspections at sufficiently frequent intervals.

The total number of registered dairying premises in the State is estimated as 19,400, and the dairy cattle 565,000. It is also estimated that there are 100,000 or more dry cows on the various farms.

The work done by the staff during the year under review may be summarised as follows :—

Miles travelled.	Premises inspected.	Cattle inspected.	Condemned for Disease.				
			Tuberculosis.	Actinomycosis.	Cancer.	Other causes.	Total.
75,555	12,525	412,125	760	195	99	12	1,066

The owner of a condemned animal is entitled, and as a rule avails himself of, the right to a post-mortem examination. This is done either at the dairy farm or at the nearest boiling-down works, by arrangement between the owner and the Dairy Inspector.

Included in the 1,066 cattle condemned for tuberculosis are 53 head which reacted to the tuberculin test; 126 head were subjected to the test, and 53 gave a positive reaction.

Dairy Inspectors are also authorised to act under the Cattle Slaughtering and Diseased Animals and Meat Act, 1902, and it is part of their duty to inspect as frequently as possible all slaughtering premises within their districts, to ensure that the premises are so constructed that they can be maintained in a sanitary condition, and that they are kept so. The Inspectors submit reports on the efficiency of the local supervision, and where necessary make recommendations for improvements in structure, supervision, or management. During the year my Staff inspected 496 slaughtering premises, and 4,431 beef cattle, of which 37 were condemned for disease.

Owing to the limited number of the inspecting staff, dairies and slaughter-houses can only be visited on an average of once in eighteen months, and in some districts less frequently than that. Between the visits of the Departmental Inspectors the officers of the Local Authorities should make periodical inspections, as the Dairies Supervision Act and the Cattle Slaughtering and Diseased Animals and Meat Act require that a regular supervision of dairy and slaughtering premises shall be maintained by the Local Authority for the district in which such premises are situated. Within the municipalities the inspecting officer is usually the Sanitary Inspector; outside the municipalities the police take charge of these inspections. With a very few exceptions the greatest assistance is given by these municipal and police officers, who see that the improvements to the dairy and slaughtering premises, recommended by the Departmental Inspector, are satisfactorily carried out, and that the premises are maintained in a cleanly condition. In fact, with such a small staff it would have been impossible to have brought premises up to their present comparatively high standard without the valuable aid of the municipal and police officers. I would like to point out, however, that if there is systematic neglect by a Local Authority between the visits of the Departmental Inspector —which, as before stated, may be as much as eighteen months apart in the larger districts —it is possible for a dairyman to milk a cow suffering from tuberculosis during the whole period of her lactation (nine or ten months), when she may not only be yielding diseased milk, but also infecting the other animals in the same herd. This is one of the special reasons why the inspections by the Departmental officers should be more frequent. The Board's Inspector should visit dairying and slaughtering premises once, at least, every four or six months; but this will only be possible when I am provided with additional Inspectors, and new appointments made from time to time to the staff, as the rapid increase in dairying demands.

It is the policy of the Board to encourage suburban dairies, as it believes that it is most desirable to shorten as much as possible the time elapsing between the taking of the milk from the cow and its delivery to the consumer, but dairies in urban and suburban areas must be maintained under the strictest sanitary conditions. For this reason it has been found necessary during the year to recommend the cancellation of some registered suburban and country dairy premises. The results obtained have been that the dairymen in a good many instances have rebuilt their premises in accordance with designs approved by the Board of Health, and other traders have expressed their intention of taking similar action.

During the year Police Court proceedings were taken against traders as under:—

No. of Cases.	Acts under which Proceedings taken.	Dismissed.	Withdrawn.	Fines.	Costs.
				£ s. d.	£ s. d.
86	Pure Food Act, 1908	3	1	137 15 0	68 13 0
10	Cattle Slaughtering and Diseased Animals and Meat Act, 1902.			51 15 0	6 10 0
5	Dairies Supervision Act, 1901			9 10 0	2 6 0
Total— 101				199 0 0	77 9 0
				Total £276 9 0	

It will be seen that the fines and costs recovered would be sufficient to pay the salary of an additional Inspector.

Inspections of cattle are made at Flemington Saleyards on Monday and Thursday of each week, and are regularly and systematically carried out. The figures for the year are:—

No. of Cattle yarded.	Number condemned prior to sale.			
	Tuberculosis.	Actinomycosis.	Cancer.	Emaciation.
204,221	68	162	13	111

Cattle to the number of 1,396 were also marked with a broad arrow. These are animals which are regarded by the Inspector as "suspicious," perhaps in poor condition, but not so thin as to be classed as emaciated; or they may be in the early stages of tuberculosis, &c. Such cattle are taken to Glebe Island Abattoirs and slaughtered under special supervision and inspection.

At Messrs. Inglis and Sons' city saleyards inspections are made every Thursday, and the number of cattle yarded and inspected will be found in the following figures, viz. :—Milch cows 5,184, dry cows 2,062, bulls 27, calves 29. Out of these totals 22 cows and 2 bulls were marked as "suspects." One dry cow was condemned as unfit for food.

During the year an outbreak of pleuro-pneumonia contagiosa occurred at the Newington Asylum, and all the cattle kept at that institution were inoculated with virus obtained from one of the affected animals, with the result that the course of the disease was checked and no adverse results arose from the inoculation.

In my annual report for the previous year the recommendations of the Royal Commission of Inquiry as to Food Supply and Prices, conducted by Mr. T. R. Bavin, were dealt with seriatim as regards their bearing on the supervision exercised by this Department, and it can only be reiterated that while the present numerical weakness of the Dairy Inspection Staff exists, the gaps in the inspections cannot be bridged over.

The Dairy Industry Act, 1915, having become operative, all factories where butter, cheese, condensed milk and margarine are manufactured will come under the control of the Dairy Branch of the Agricultural Department, but milk depôts will, as heretofore, be supervised by this Department. Provision has also been made for the Board of Health to nominate one of the members of the Appeal Board which has been created to hear all cases of appeal which may arise against the decisions of officers working under the Dairy Industry Act.

RETURNS, 1st January to 31st December, 1915.

Miles travelled.	Dairying Premises, &c., inspected.							Slaughtering Premises, &c., inspected.				Application of Tuberculin Test	
	Dairy Premises inspected.	Dairy Cattle examined.	Number Condemned.	Tuberculosis.	Actinomycosis.	Cancer.	Other Diseases.	Number.	Number of Cattle Examined.	Number Condemned.	Reasons for Condemnation.	Number.	Result.
34,339	5,964	201,674	571	416	98	50	7	199	1,910	15	3 act. ..... 12 tub.	62	28*
1,974	367	12,617	28	20	5	3	...	8	5	...	.....	13	6*
2,421	523	13,180	4	3	1	...	...	15	...	...	.....	...	...
3,285	483	20,794	16	10	4	2	...	48	42	1	act.	5	2*
1,942	440	11,211	41	17	19	5	...	5	2,138	4	3 act. ..... 1 tub.	...	...
3,300	428	4,591	4	...	3	1	...	41	44	7	6 tub. ..... 1 act.	...	...
1,703	573	17,064	19	15	4	...	...	24	20	...	.....	3	...
1,810	506	15,610	30	23	4	3	...	14	7	...	.....	...	...
1,640	387	18,262	75	60	7	8	...	8	8	...	.....	4	2*
4,608	324	6,088	11	7	2	1	1	53	36	1	tub.	2	...
2,465	367	22,635	106	94	4	8	...	7	113	1	tub.	4	3
2,009	271	11,551	20	12	5	3	...	9	4	...	.....	...	...
2,221	93	2,583	6	6	...	...	...	2	4	...	.....	21	6
2,182	426	12,908	46	24	17	5	...	19	23	...	.....	2	1
2,591	339	6,508	6	4	1	1	...	10	31	...	.....	...	...
68,490	11,491	377,276	983	711	174	90	8	462	4,385	29	21 tub. ..... 8 act.	116	48
8,065	1,034	34,849	83	49	21	9	4	34	46	8	8 tub.	10	5
75,555	12,525	412,125	1,066	760	195	99	12	496	4,431	37	37	126	53

CATTLE inspected at Flemington Yards from 1st January to 31st December, 1915.

1915.	Number of Cattle.	Condemned.	Emaciation.	Actinomycocis.	Tuberculosis.	Cancer.	Confiscated.	Marked.
January	18,605	45	30	13	2	.....	.....	89
February	18,678	33	20	6	7	.....	.....	77
March	23,537	71	45	16	7	3	.....	121
April	22,091	59	.....	36	19	4	35	150
May	23,368	38	2	26	9	1	23	191
June	17,240	23	.....	20	2	1	3	144
July	15,780	13	.....	12	.....	1	21	154
August	13,663	10	.....	8	2	.....	18	127
September	12,864	19	.....	13	5	1	8	93
October	12,794	18	.....	9	9	.....	2	90
November	15,477	8	.....	3	4	1	1	67
December	10,124	3	.....	.....	2	1	.....	65
Totals	204,221	340	97	162	68	13	111	1,396

CHIEF INSPECTOR EVERETT'S reports from 1st January to 31st December, 1915.

Result of post-mortem examination of cattle marked at Flemington Yards.

1915.	Marked.	Totally condemned.	Emaciation.	Tuberculosis.	Other Diseases.	Partially—			Injury and Abscess.	Cancer.	Passed.
						Condemned.	Actinomycosis.	Tuberculosis.			
January	89	15	4	11	...	57	39	8	5	5	17
February	77	8	3	5	...	50	32	9	6	3	19
March	121	9	5	4	...	75	37	11	19	8	37
April	150	21	6	15	...	68	40	17	6	5	58
May	191	34	22	12	...	86	45	22	9	10	71
June	144	32	19	12	1	68	41	5	14	8	44
July	154	36	27	9	...	47	31	3	7	6	53
August	127	19	7	12	...	42	28	6	4	4	36
September	93	31	8	10	13	38	24	9	1	4	45
October	90	8	...	8	...	53	29	10	11	3	30
November	67	7	2	5	...	46	28	10	3	5	26
December	93	3	...	3	...	51	30	14	1	6	15
Totals	1,396	223	103	106	14	681	404	124	86	67	451

MEAT EXPORT BRANCH.

REPORT OF THE VETERINARY INSPECTOR IN CHARGE.

Staff.

Veterinary Inspector-in-Charge—G. K. THORPE.

Assistant Veterinary Inspector—C. J. M. WALTERS (on Active Service).

Clerk—R. B. JOHNSTON.

Meat Inspectors.

O. O'Connor.	H. Thompson.	C. A. Johnston.
G. Jack.	A. S V. Lee.	J. Elliott.
J. S. Talbot.	G. Leeder.	A. Marshall.
T. Tancred.	L. H. Nolan.	J. Scott.
G. R. McCredie.	F. L. O'Toole.	A. E. Blackwell.
A. H. Smith.	S. C. Vidler.	W. J. Hendy.
T. McDonald.	A. Matthews.	A. D. Norton.
P. Bruce.	J. M. Madden.	J. T. Roper.
F. S. Blade.	W. Dineen (resigned in December).	

The Staff of Inspectors at Glebe Island, under Mr. Chief Inspector Everett, also work under the supervision of this Branch.

The Director-General of Public Health.

Sir,

I have the honor to submit a report on the work of my Branch for the year ended 31st December, 1915.

General.

Owing to the absence of the Chief Veterinary Inspector on sick leave, I have, in addition to my usual duties, carried out the work usually performed by him during the period 21st July to 31st December. I regret that the pressure of other work did not permit me to give closer attention to this work.

The absence of Mr. C. J. M. Walters, Assistant Veterinary Inspector of this Branch, and Mr. R. C. Bell, Assistant to the Chief Veterinary Inspector, who are serving with the Australian Army Veterinary Corps, has compelled a rearrangement of the usual procedure of inspection. The Chief Veterinary Inspector has therefore arranged for inspection of cattle at Flemington Saleyards, and Mr. Marshall, of the Meat Export Branch. has inspected the cattle at Inglis' City Yards. The record of the inspection of cattle at Flemington and the City Yards, and the results of post-mortem examination of "suspects" will not be included in my report.

A matter, which suggests itself for special reference and regret, is the death during the year of two old and respected members of the Inspection Staff at Glebe Island, Mr. William McDonald and Mr. William Jones.

Dr. De Vletter, a Veterinary Officer in the service of the Dutch Government, who is stationed in Java, visited the new Abattoir at Homebush and other slaughtering premises in June.

Meat Supply for Imperial Uses Act.

The passing of the Meat Supply for Imperial Uses Act No. 6, 1915, an Act to secure supplies of meat for the use of His Majesty's Imperial Government during war and for other purposes, also increased the work and responsibilities of this Branch. It became necessary to acquire knowledge of shipping and other customs to carry out the work accurately and expeditiously.

The procedure was as follows:—The Meat Industry and Abattoir Board, in consultation with the Frozen Meat Exporters' Association, agreed on a price for the various grades of meat. The Imperial Government ratified the agreement. The Imperial Government Frozen Meat Australian Shipping Committee made the necessary arrangement for space in the various ships. The New South Wales Government, on behalf of the Imperial Government, took delivery of the meat on board ship. In regard to each shipment, bills of lading, invoices, weight and grade certificates, and other customary documents were handed in at this office. After checking, the documents were forwarded to the Chief Secretary's Department for further checking and payment of accounts.

Approximately 922,297 carcases of mutton and lamb and 51,451 quarters of beef were forwarded during the year to the Imperial Government. The prices paid were as follows,

follows, with the exception of a few relatively small consignments of mutton and lamb purchased at a slightly increased rate :—

Wether Mutton	F.A.Q./G.A.Q.	... ...	4¼d. per lb.
,, ,,	3rd Qty. ...	... ...	4⅛d. ,,
Ewe ,,	F.A.Q./G.A.Q.	... ...	4⅛d. ,,
,, ,,	3rd Qty. ...	... ...	4d. ,,
Teg ,,	F.A.Q./G.A.Q.	... ...	4¾d. ,,
,, ,,	3rd Qty. ...	... ...	4⅝d. ,,
Lamb ,,	F.A.Q./G.A.Q.	... ...	5¼d. ,,
,, ,,	3rd Qty. ...	... ...	5⅛d. ,,
Ox Beef Sides	G.A.Q. ...	... ...	4⅞d. ,,
,, ,,	F.A.Q. ...	... ...	4¾d. ,,
,, ,,	3rd Qty. ...	... ...	4⅝d. ,,
Cow beef ,,	G.A.Q. ...	... ...	4⅝d. ,,
,, ,,	F.A.Q. ...	... ...	4⅜d. ,,

In the case of beef, hind-quarters were paid for at ½d. per lb. in advance, and fore-quarters ½d. per lb. less than the prices quoted for sides. In addition, it was arranged to pay the cost of cold storage after 28 days, and interest on the value of the goods after a similar period at the rate of 6 per cent.

Canned Meat Trade.

During the early months of the year, work at the canning factories was particularly brisk owing largely to considerable orders for canned meats for military use in South Africa.

This Branch was able to render service to the Commonwealth Government by aiding in the purchase and supervision of the preparation of these goods for the Union Government of South Africa. Later in the year this demand ceased and the high price of meat then ruling practically compelled some works to close down, while operations were appreciably decreased at others.

In June the Canned Meat Exporters in this State made representations to the effect that they were not receiving just treatment in the matter of orders from the British War Office. Some New South Wales meats offered to the War Office were refused, but there appears to be substantial reasons for believing that large quantities of New South Wales meats supplied by American firms were purchased by the War Office. The rejected meat was not specially packed to meet War Office requirements, but was shipped from here on consignment for sale in London or elsewhere. There is no evidence that any of this meat was not merchantable. Probably a little more careful trimming of the meat would have ensured that all the meat offered would have been accepted.

With regard to any future supplies of canned meats, which the War Office may require, it is safe to say that any rational requirement can be met in this State, provided that this Branch is provided with a copy of the specifications in time to give efficient supervision to the orders.

The canned meats and meat extract exported during each month of the year are shown hereunder :—

Month.	Canned Meats (Packages).	Meat Extract and Essence (Packages).	Month.	Canned Meats (Packages).	Meat Extract and Essence (Packages).
January	29,494	404	July	5,254	433
February	43,193	574	August	17,150	90
March	34,348	455	September	648	202
April	69,884	360	October	3,184	578
May	39,146	763	November	4,654	109
June	14,884	318	December	4,971	303

The New State Abattoir at Homebush Bay.

A small amount of slaughtering for export was commenced in April at the Homebush Bay Abattoir with a view, it is understood, of testing the machinery. The operations were, however, of short duration. Grading facilities for export were at the time inadequate, and the distance from available freezing works too great to ensure the best results.

The construction of an Export Works on this area, with proper grading and freezing accommodation, will overcome these disabilities.

Contagious Diseases.

The recent noticeable prevalence of contagious pleuro-pneumonia in the metropolitan area emphasises the importance of an abattoir in the detection of contagious diseases. This Branch has given every assistance by immediately reporting cases of this disease discovered at post-mortem examinations to the Chief Inspector of Stock, who administers the Stock Diseases (Tick) Act.

It seems regrettable that veterinary officers are not available to give careful attention to the prevalence, distribution, &c., of animal diseases at the more important slaughtering establishments.

Slaughter

Slaughter of Female Animals.

A record has been kept at certain works slaughtering for export as to the number of female animals slaughtered, with reference particularly to those of breeding age.

The following table indicates that at these works a large percentage of the female bovine animals slaughtered, excluding calves, were either heifers or cows of breeding age, or speyed cows.

Cows of Breeding Age.	Speyed Cows.	Heifers.	Cows past Breeding Age.
10,396	1,946	522	1,115

These figures show that of 13,979 female animals slaughtered, only 1,115 were regarded as past breeding age.

Foreign Reports.

This year no complaints have been received from Great Britain or elsewhere regarding diseased meat exported from this State. I think it may now be safely said that all meat exported from the State receives careful and thorough examination.

Accidents may happen, however, in any service, no matter how well organised, and it is interesting to note that the Officers of Health for the City of London continue to find evidences of disease in meat arriving from other exporting countries. The findings are not given, it seems, the same publicity as has been the case in meat from the Commonwealth similarly affected.

Inspection of Food, Animals, and Carcases.

These returns show the food animals slaughtered under inspection of officers of the Board of Health for the year ending 31st December, 1915, and the number of carcases totally or partially condemned.

(1) At Sydney Abattoir.

Animals.	No. Slaughtered.	Tuberculosis.		Actinomycosis.		Lymphadenitis.		Cancer.		Bruises.		Emaciation.	Other Diseases.	
		Totally.	Partially.	Totally.	Partially.	Totally.	Partially.	Totally.	Partially.	Totally.	Partially.	Totally.	Totally.	Partially.
Bulls	3,887	194	406	...	14	...	...	...	1	4	10	53	5	9
Bullocks	82,776	633	1,478	...	322	...	...	...	46	24	20	15	6	68
Calves	46,825	4	...	...	...	...	...	...	...	...	1	12	1,216	...
Cows	57,103	1,210	1,559	...	141	.	...	...	30	88	80	260	19	80
Pigs	65,051	573	1,812	...	...	...	...	...	...	2	22	12	56	45
Sheep	1,679,532	...	...	...	...	49	317	...	...	22	56	112	121	8

Much of the veal condemned was on account of immaturity.

Percentage of Cattle condemned for tuberculosis :—Totally, 1·42 per cent.; Partially, 2·39 per cent.

Percentage of Pigs condemned for tuberculosis :—Totally, ·88 per cent.; Partially, 2·78 per cent.

(2) At about Fifty-two Country and Suburban Private Slaughter-houses.

Animals.	No. Slaughtered.	Tuberculosis.		Actinomycosis.		Lymphadenitis.		Cancer.		Bruises.		Emaciation.	Other Diseases.	
		Totally.	Partially.	Totally.	Partially.	Totally.	Partially.	Totally.	Partially.	Totally.	Partially.	Totally.	Totally.	Partially.
Bulls	188	10	4	...	...	...	...	...	...	...	...	...	...	...
Bullocks	72,543	482	1,332	9	65	...	...	...	3	3	11	5	23	174
Calves	5,860	3	3	...	...	...	...	...	...	4	1	3	4	2
Cows	38,355	534	406	1	31	...	...	...	1	7	16	144	5	4
Pigs	26,688	256	1,030	...	1	...	...	...	...	1	19	7	13	1
Sheep	1,609,249	...	...	...	...	1,471	473	...	...	823	84	2,034	97	3
Total	1,752,883	1,285	2,775	10	97	1,471	473	...	4	838	131	2,193	142	184

Percentage of Cattle condemned for tuberculosis :—Totally, ·92 per cent.; Partially, 1·57 per cent.

Percentage of Pigs condemned for tuberculosis :—Totally, ·96 per cent.; Partially, 3·86 per cent.

(3) At Eight Country and Suburban Bacon Factories.

Pigs killed, 117,494. Number condemned :—Tuberculosis : Totally, 2,435; Partially, 3,574. Bruises : Totally, 3; Partially, 37. Emaciation : Totally, 8; Partially, 0. Other diseases : Totally, 95; Partially, 12.

Percentage of Pigs condemned for Tuberculosis :—Totally, 2·07 per cent.; Partially, 3·04 per cent.

(4) Total for whole State (where Departmental inspection is maintained).

Number of food animals slaughtered ... 3,805,551
Number condemned (wholly or partially) ... 26,982 = ·709 per cent.

Tuberculosis.

The following shows the percentage of Animals totally or partially condemned for tuberculosis at the time of slaughter.

nimals.	No. Slaughtered.	Condemned for Tuberculosis.		Percentage condemned for Tuberculosis.		Percentage condemned for Tuberculosis.
		Totally.	Partially.	Totally.	Partially.	Totally or Partially.
Bulls	4,075	204	410	5·01	1·06	6·07
Bullocks	155,319	1,115	2,810	·717	1·8	2·517
Calves	52,685	7	3	·013	·006	·019
Cows	95,458	1,744	1,965	1·82	2·06	3·88
Pigs	91,739	829	2,842	·903	3·09	3·993

Inspection and Supervision of Meat for Export.

The meat and meat food products inspected and prepared for export under the supervision of officers of the Meat Export Branch during each month of the calendar year 1915 are as shown hereunder. In addition to the ante and post-mortem inspection of carcases, the freezing, boning and processing of all meats for export have been carefully supervised.

1915.	Canned Meats. (Packages).	Meat Extract and Essence (Packages).	Mutton and Lamb (Carcases).	Beef (Quarters).	Veal (Carcases).	Pork (Carcases).	Meat, other than carcases (packages), pairs of legs of mutton, buttocks of beef, kidneys, salted meat, &c.
January	29,494	404	107,432	14,667	146	.....	1,565
February	43,193	574	198,442	15,243	116	7	3,023
March	34,348	455	150,777	30,454	378	12	889
April	69,884	360	71,991	5,412	.....	13	1,249
May	39,146	763	151,141	19,017	93	47	2,608
June	14,884	318	157,796	5,102	56	.....	581
July	5,254	433	81,764	1,391	.....	.....	1,176
August	17,150	90	6,020	16	1	2	2,203
September	648	202	7,416	.....	.....	.....	466
October	3,184	578	148,241	.....	.....	.....	236
November	4,654	109	281,788	6	.....	.....	1,229
December	4,971	303	68,943	7	4	.....	3,240
Totals	266,810	4,589	1,431,751	91,315	794	81	18,465

Meat Condemned on Reinspection.

At canning factories and cold storage works the following quantities of meat were found on reinspection to have become sour, putrid, or unwholesome, and were condemned. The high prices obtaining for meat have been responsible for a marked improvement in the care and handling of meat and meat food products.

Mutton (carcases).	Mutton (pieces).	Mutton (lb.).	Beef (qrs.).	Beef (pieces).	Beef (lb.).	Sundries.	Sheep Kidneys.	Tongues.	Veal (quarters).
91	32	17,810	44	121	12,000	12 bags. 19 cases.	7 cases.	60	47

Now that cold storage is generally available, it is not considered that the use of preservatives is necessary or advisable in the preparation of sausage meat, mince meat, &c. In my opinion, the regulation under the Pure Food Act, 1908, permitting the addition of sulphur dioxide to these products is responsible in some cases for carelessness in the handling of the meat.

Canned Meats Rejected for Export.—Approximately 77 tons of canned meats were also rejected for export on reinspection, either on account of defects in the processing or because the meat was below the export standard.

Examination of Briskets of Beef for Worm Nodules.—The Commerce Act Regulations prohibit the export of briskets of beef affected with worm nests (*Filaria Gibsoni*). The examination of briskets is carried out principally at canning works.

The

The total number examined during the year was 167,528, of which 32·22 per cent. were found to be affected with this parasite.

Total Briskets examined.	Number free from Nodules.	Number affected with Nodules.
167,528	113,535	53,993

Alterations in Commerce Act.

Rules and Regulations.

The tags attached to all meats intended to be exported are now marked at the time of inspection, so as to indicate the date on which the meats are placed in cold storage. By this means the period of storage of any particular parcel can be readily determined.

In December the fees to be collected on meat exported were considerably increased. The Amended Regulation 55 (Commerce Act), which deals with this matter, now reads :—

(1) "There shall be paid to the Collector in respect of all butter submitted for export, and of live stock submitted for slaughter and inspection for export, the following fees :—

Butter	per box ¼d.
Sheep, lambs, and goats	per head ½d.
Cattle and calves	per head 6d.
Pigs	per head 6d.

(2) "No butter or meat shall be permitted to be removed for home consumption from any appointed place, nor shall an export permit be issued therefor, until the fees in respect of such goods shall have been paid."

Export of Bacon.

The quantity of bacon exported has fallen to approximately half the quantity exported during the previous year. Permits have been issued for only 574 packages, equivalent to 79,389 lb.

There seems to be no prospect of increased trade in pork products while the number of hogs in the State remains relatively so small.

Stock Markets.

Probably for the first time in the history of this State the prices of meat have approached the London parity. Many reasons have been advanced to account for this phenomenal and sudden rise in price. It appears, however, in so far as this State is concerned, that two factors are chiefly responsible—the adverse climatic conditions which certain parts of the State experienced, and the increased activity and number of the Queensland meat works. This latter condition has resulted in a marked diminution of the number of cattle drawn from the northern State for slaughter in New South Wales.

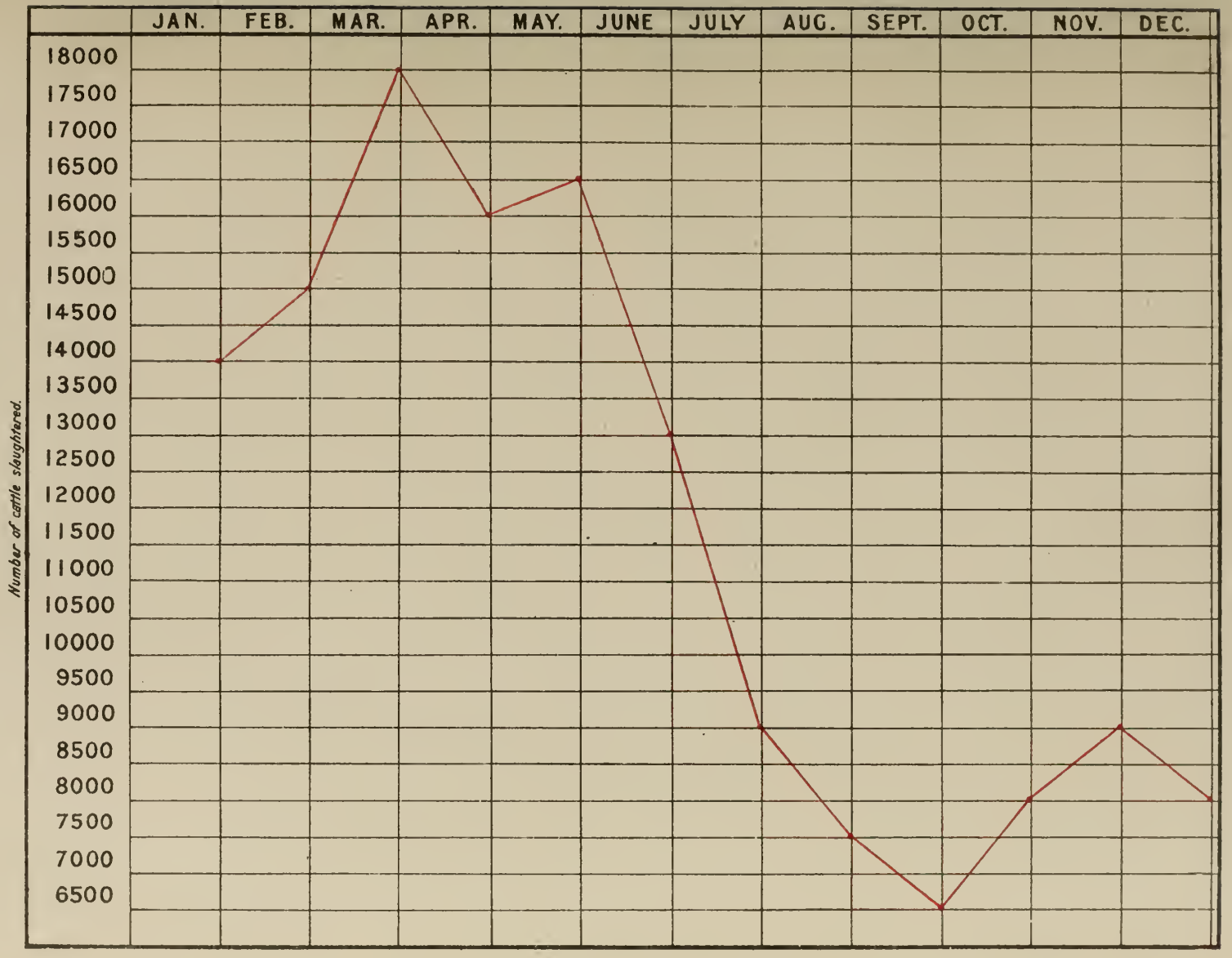
The shortage of cattle and the high prices obtaining (as much as 80s. per cwt. has been paid at Flemington) have encouraged certain firms to look elsewhere for supplies of beef. As a consequence, shipments have been made to this State of frozen beef from Western Australia, and a few small consignments of live cattle have arrived from Fiji, New Caledonia, and Norfolk Island.

It is understood that during the 1902 drought this State drew on New Zealand for supplies of mutton.

The increased cost of meat has noticeably improved the methods of handling the product, and has created a demand for certain less choice cuts, which the butcher previously could sell only with difficulty. The rough graph below indicates how the number of cattle slaughtered at the Sydney Abattoir, Glebe Island, diminished with the scarcity and high price of the stock.

In concluding, I desire to state that the conduct of the staff has been satisfactory; the work of the Inspectors, at times arduous and uncongenial, has been cheerfully and carefully carried out.

I have, &c.,
G. K. THORPE.


JAN.
FEB.
MAR.
APR.
MAY.
JUNE
JULY
AUG.
SEPT.
OCT.
NOV.
DEC.
18000
17500
17000
16500
16000
15500
15000
14500
14000
13500
13000
12500
12000
11500
11000
10500
10000
9500
9000
8500
8000
7500
7000
6500
Number of cattle slaughtered.

69685

REPORT OF THE CHIEF SANITARY INSPECTOR FOR THE YEAR ENDED 31st DECEMBER, 1915.

Inspectorial Staff.

Chief Inspector—	E. A. Cresswick, Cert. R.S.I.
Sanitary ,,	T. A. W. Curry, Cert. R.S.I.
,, ,,	E. M. Jackson, Cert. R.S.I.
,, ,,	H. M. Wormald, Cert. R.S.I.

The staff under my control has been very fully occupied during the year, and considerable progress has been made with some of the work delayed by the smallpox epidemic.

Public Health (Amendment) Act, 1915, Section 16.—The facilities for obtaining a closing order with regard to the buildings unfit for habitation or occupation offered by the Public Health (Amendment) Act, 1915, have been freely availed of, and considerable improvement is being effected in several districts in the conditions relating to the housing of the poorer classes. Sixty-five qualified sanitary inspectors appointed by local authorities have been authorised by the Department to issue certificates in accordance with the amended Act. In districts where qualified inspectors are not employed by the local Council, 125 inspections of insanitary buildings were made by the sanitary inspectors of the Department, reports submitted, and certificates issued to local authorities.

Country Towns.—A systematic inspection of nine country towns was carried out. The inspections included a general description of each town, sanitary administration, water supply, disposal of sewage and liquid wastes, collection and disposal of nightsoil and garbage, meat and food supplies, noxious trades, cemeteries, hospitals, vital statistics, infectious diseases and disinfection, building areas and buildings, woolscours and pollution of streams, and the sanitary condition of hotels.

Thirty reinspections of country towns were made to ascertain if recommendations previously made had been complied with.

Eleven outbreaks of infectious disease were investigated by the staff.

Hotels.—189 hotels in country towns were inspected and recommendations forwarded to the Department of the Attorney-General and of Justice for action by the police. The pamphlet "Sanitation of Hotels" issued by the Department for the information and guidance of local authorities and of publicans licensed under the provisions of the Liquor Act, 1912, in town and country districts, has been widely distributed.

In consequence of the wider powers provided in the Amended Public Health Act, systematic inspections of all hotels within the State will be made by inspecting officers who will report on the general conditions, and notices will be served requiring compliance with the requirements specified. The inspections in the first instance will be for the purpose of ascertaining if the recommendations made in the pamphlet have been given effect to, licensees being advised to rectify defects themselves, rather than leave the requirements to be enforced by the Department and the Licensing Bench.

General Sanitary Defects, &c.—Fifty-nine inspections were made to investigate complaints of nuisance from defective drainage, disposal of nightsoil, garbage and liquid wastes, dirty stables, offensive trades, pollution of streams, garbage destructors, &c.

Twenty-five septic tank installations, or proposed sites for same were inspected, and twenty-three plans reported on for the guidance of local authorities.

The sanitary conveniences of twelve government buildings were inspected and reported on; also the conveniences at fourteen wharves and thirty-seven railway stations; and the crews' quarters on thirty-seven steamers.

Smallpox Epidemic.—Fifty-one premises in which cases of smallpox had occurred were inspected, and forty-two disinfected. Sixty-one visits were made by sanitary inspectors for the purpose of tracing contacts. An officer was always on duty, or within call, at week-ends and holidays during the prevalence of smallpox; and another officer was

was transferred to Kurri Kurri and Cessnock districts for over two months during the outbreak in that locality. Seven temporary wards to accommodate from six to twenty beds were erected at country hospitals in districts where outbreaks of smallpox disease had occurred. These wards were strongly built on wooden frames, and roofed with iron, floored with wood or ruberoid, and enclosed with calico. In each case the requisite number of wire stretchers, mattresses, sheets, blankets, and pillows were provided, in addition to many other requisites to render the patients comfortable.

Unhealthy Building Lands.—Eight areas of land were proclaimed unfit for building purposes; 191 inspections were made of unhealthy lands.

General Inspections.—Twenty inspections were made of railway camps, and twenty-five of wool-scouring establishments. Thirteen inspections were made in respect of the pollution of watercourses and water supplies (public and private); twenty inspections of sanitary services concerning which complaints had been received. Five inspections were proposed sites for night-soil depôts; and seventeen of existing depôts and several inspections were made of the settlement of Stanumville (Calico Town).

Garbage Disposal.—Twenty-one garbage tips in the metropolitan district and six in country districts were inspected. Meldrum Garbage Destructors have been installed at North Sydney and Marrickville at a cost of £9,000.

A Plant Lightning Crusher has been installed by the Woollahra Council, which pulverises the garbage into a powder of some manurial value. This apparatus, the cost of which is less than £3,000, is now under observation, and, if equal to the claims made as to the capacity, value of the by-product, freedom from nuisance and smoke, will probably be availed of by several local authorities. A tender has been accepted for the same type of destructor at Paddington, but, owing to the war, difficulty has been experienced in obtaining the plant from England. Several Councils are adopting a more simple type of incinerator, similar to those in use at the Liverpool Military Camp, which are considered fairly efficient and the cost of which is very moderate.

Legal Proceedings.—Evidence was given in three cases where prosecutions were undertaken by Licensing Inspectors (police) against hotelkeepers for not carrying out recommendations; in two cases where prosecutions were undertaken by local authorities for breaches of Local Government ordinances; and in one Supreme Court action arising out of the unsuccessful treatment (purification) of effluent from a large wool-scouring establishment.

Miscellaneous Matters.—Several huts for accommodation of soldiers at Liverpool were disinfected; four proposed sites for sanatoria, and four premises proposed to be used by the Red Cross Society as hospitals, were inspected. Two conferences with local authorities were attended with regard to installing sanitary service.

Rat Destruction.—The number of rats caught on wharves by the Departmental staff of three rat-catchers was 2,293; City Council staff of six catchers, 5,041; Harbour Trust, one catcher, 876; other sources (chiefly from vessels after fumigation by Quarantine Department), 1,303. Rats are now not nearly so prevalent on wharves as formerly. All the rats were examined by the Microbiological Laboratory, but none were found to be infected with plague.

Noxious Trades.—The provisions of the Noxious Trades Act were extended to two new districts (Goulburn Municipality and Macleay Shire) during the year. 634 Noxious Trades licenses were issued and 510 premises inspected. Applications for licenses from rag-pickers, who were found to be collecting rags from garbage tips, were refused in all cases. Thirty-two inspections were made at night in districts where fat-extractors had caused complaints of nuisances by allowing offensive vapours to escape, and seventeen traders were prosecuted for breaches of the Act and Regulations. Several tanneries were inspected.

E. A. CRESSWICK,
Chief Sanitary Inspector.

TABLE showing the number of Licensed Noxious Trades Premises in each Municipality and Shire within the County of Cumberland.

District.	Fat-extractor.	Fat-melter.	Bone-grinder.	Bone-boiler.	Glue-maker.	Pig-keeper.	Poultry-farmer.	Gut-scraper.	Knacker.	Rag-dealer.	Rag-picker.	Flock-maker.	Manure-maker.	Wool-scourer.	Total Number Licensed.	Efficiency of Supervision by Local Authority.
Municipalities—																
Sydney	...	...	...	...	...	...	...	...	...	1	2	...	...	...	3	Good.
Alexandria	12	...	3	3	2	4	3	3	2	...	3	2	5	1	28	,,
Auburn	1	...	...	...	...	1	2	1	...	...	...	...	...	...	5	Fair.
Balmain	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	,,
Bankstown	1	...	...	...	...	28	31	2	3	...	...	...	1	...	41	Good.
Bexley	...	...	...	...	...	4	5	...	...	...	...	...	...	...	5	,,
Botany	3	...	...	...	1	16	22	...	...	...	...	...	...	14	40	,,
Campbelltown	1	...	...	...	...	1	...	...	...	...	...	...	...	...	2	Fair.
Canterbury	2	...	...	...	...	11	11	...	...	...	...	...	1	...	16	,,
Castlereagh	1	...	...	...	...	1	...	...	...	...	...	...	...	...	2	,,
Eastwood	2	...	...	...	...	3	1	...	...	...	...	...	...	...	5	,,
Enfield	2	...	...	...	...	2	1	1	...	...	...	...	...	...	6	,,
Glebe	...	...	...	...	...	...	...	...	...	...	1	1	...	...	2	Good.
Granville	3	...	...	...	...	4	2	1	1	...	1	...	1	...	12	,,
Hurstville	...	...	...	...	...	1	1	...	...	...	...	...	...	...	1	Fair.
Kogarah	...	...	...	...	...	2	2	...	...	...	...	...	...	...	2	Poor.
Lane Cove	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	Fair.
Lidcombe	2	...	...	...	...	1	...	...	...	...	...	...	...	...	3	,,
Leichhardt	2	...	...	...	...	...	...	...	...	...	5	...	...	...	8	Poor.
Liverpool	3	...	...	...	...	11	9	1	...	...	...	...	...	1	16	Poor.
Manly	...	...	...	...	...	...	2	...	1	...	...	...	...	...	3	Good.
Marrickville	...	1	...	...	...	...	...	...	...	...	...	...	...	2	3	,,
Mascot	2	...	1	...	...	13	11	...	...	...	...	...	...	...	19	Fair.
Parramatta	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	Good.
Penrith	2	...	...	...	...	2	...	...	...	...	...	...	...	...	4	Fair.
Petersham	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	Good.
Prospect	3	...	...	...	...	5	...	...	...	...	...	...	...	...	8	Fair.
Randwick	...	...	...	...	...	2	4	...	...	1	...	...	...	1	6	Good.
Redfern	...	...	...	...	...	...	...	...	...	...	2	...	...	...	2	,,
Richmond	5	...	...	...	...	4	...	...	...	...	...	...	...	...	9	,,
Rockdale	1	...	...	...	...	6	10	...	...	...	...	...	...	...	11	,,
Ryde	1	...	...	...	...	5	5	...	...	...	...	...	...	...	6	Fair.
St. Peter's	...	1	...	...	...	1	...	...	...	...	1	...	...	...	3	,,
St. Mary's	4	...	...	...	...	3	...	...	...	...	...	...	...	...	7	,,
Smithfield	1	...	...	...	...	1	...	...	...	...	...	...	...	1	3	Poor.
Waterloo	1	...	...	...	...	...	...	...	...	...	...	1	...	...	2	Good.
Waverley	...	...	...	...	...	3	4	...	...	...	...	...	...	...	5	Fair.
Willoughby	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	,,
Windsor	3	...	...	...	...	...	...	1	...	...	...	...	...	...	4	,,
Shires—																
Baulkham Hills	1	...	...	...	...	2	...	...	...	...	...	...	...	1	4	Fair.
Blacktown	5	...	...	...	...	6	...	...	...	...	...	...	...	...	11	,,
Bulli	6	...	...	...	...	4	1	...	...	...	...	...	...	...	11	,,
Hornsby	2	...	...	...	...	4	...	...	...	...	...	...	...	...	6	,,
Kuring-gai	2	...	...	...	...	8	2	...	...	...	...	...	...	...	10	,,
Nepean	3	...	...	...	...	3	...	...	...	...	...	...	...	...	6	,,
Sutherland	3	...	...	...	...	4	...	...	...	...	...	...	...	...	7	,,
Warringah	4	...	...	...	...	5	10	...	...	...	...	...	...	...	14	,,
Wollondilly	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
	84	2	4	3	3	173	139	10	7	2	17	4	9	21	366	

TABLE showing the number of Licensed Noxious Trades Premises within the Hunter River Combined Sanitary District.

Municipalities—																
Adamstown	1	...	...	...	...	2	1	...	...	...	...	...	...	...	4	Fair.
Greta	1	...	...	...	...	1	...	...	...	...	...	...	...	...	2	,,
Hamilton	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Maitland West	1	...	...	...	...	1	...	...	...	...	...	...	...	...	2	Good.
Merewether	...	...	...	...	...	1	1	...	...	...	...	...	...	...	2	,,
New Lambton	3	...	...	...	...	3	1	...	...	...	...	...	...	...	7	Fair.
Plattsburg	2	...	...	...	...	2	...	...	...	...	...	...	...	...	4	,,
Wallsend	...	...	...	...	...	1	1	...	...	...	...	...	...	...	2	Good.
Waratah	1	...	...	...	...	3	1	...	...	...	...	...	...	...	5	,,
Wickham	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Shires—																
Bolwarra	4	...	...	...	...	4	...	...	...	...	...	...	...	...	8	Fair.
Cessnock	21	...	...	...	...	21	...	...	...	...	...	...	...	...	42	Good.
Lake Macquarie	12	...	...	...	...	12	2	...	...	...	...	...	...	...	26	,,
Port Stephens	5	...	...	...	...	5	...	...	...	...	...	...	...	...	10	,,
Tarro	15	...	...	...	...	13	1	...	...	...	...	...	...	...	29	,,
	66	...	...	...	...	69	8	...	...	...	...	...	...	...	143	

TABLE showing the Number of Licensed Noxious Trades Premises in Municipalities and Shires in other parts of the State to which the Act has been extended.

District.	Fat-extractor.	Fat-melter.	Bone-grinder.	Bone-boiler.	Glue-maker.	Pig-keeper.	Poultry-farmer.	Gut-scraper.	Knacker.	Rag-dealer.	Rag-picker.	Flock-maker.	Manure-maker.	Wool-scourer.	Total Number Licensed.	Efficiency of Supervision by Local Authority.
Municipalities—																
Broken Hill	2	...	...	...	...	16	1	...	...	...	...	...	...	...	18	Poor.
Casino	3	...	...	...	...	2	...	...	...	...	...	...	...	...	5	Fair.
Cobar	2	...	...	...	...	2	...	...	...	...	...	...	...	...	4	Bad.
Coonamble	2	...	...	...	...	2	...	...	...	...	...	...	...	...	4	Fair.
Dungog	3	...	...	...	...	3	...	...	...	...	...	...	...	...	6	,,
Goulburn	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	,,
Inverell	4	...	...	...	...	...	8	...	...	...	...	...	...	...	12	,,
Lismore	4	...	...	...	...	...	...	...	...	...	...	...	...	...	4	Good.
Moama	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Moree	3	...	...	...	...	3	...	...	...	...	...	...	...	...	6	Fair.
Murwillumbah	1	...	...	...	...	1	...	...	...	...	...	...	...	...	2	
Tamworth	...	...	...	...	...	2	1	1	...	...	...	...	...	...	3	Poor.
Ulmarra	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	Fair.
Wagga	...	...	...	...	...	2	...	...	...	...	...	...	...	...	2	Good.
Shires—																
Blaxland	8	...	...	...	...	10	...	...	...	...	...	...	...	...	18	Good.
Muswellbrook	3	...	...	...	...	3	...	...	...	...	...	...	...	...	6	Fair.
North Illawarra	5	...	...	...	...	5	...	...	...	...	...	...	...	...	10	,,
Tweed	11	...	...	...	...	11	1	...	1	...	...	...	...	...	23	,,
	52	...	...	...	...	71	3	1	1	...	...	...	...	...	125	
Total in State	202	2	4	3	3	315	150	11	8	2	17	4	9	21	634	

PROSECUTIONS for Breaches of the Noxious Trades Act and Regulations.

Date.	District.	Prosecutor.	Nature of Trade.	Trader's Name.	Offence.	Fine and Costs.
1915.						£ s. d.
21 January	Alexandria	Health Department	Fat-extractor	F.H.	Reg. 9A.	3 6 0
21 ,,	,,	,, ,,	,,	F.H.	,, 11C.	3 6 0
21 ,,	,,	,, ,,	,,	C.K.	,, 3A.	2 16 0
21 ,,	,,	,, ,,	,,	C.K.	,, 9A.	2 16 0
28 ,,	Warringah	Local Authority	,,	H.P.	Act	7 8 0
9 February	Alexandria	Health Department	,,	C.M.	Reg. 11A.	0 16 0
9 ,,	Mascot	,, ,,	,,	M.G.	,, 9A.	2 6 0
9 ,,	,,	,, ,,	,,	M.G.	,, 11A.	1 6 0
9 ,,	Alexandria	,, ,,	,,	D.F.S.	,, 10A.	3 6 0
9 ,,	,,	,, ,,	,,	D.F.S.	,, 10A.	3 6 0
9 ,,	,,	,, ,,	,,	M.O'R.	,, 10A.	3 6 0
9 ,,	,,	,, ,,	,,	M.O'R.	,, 10A.	3 6 0
9 ,,	,,	,, ,,	,,	M.O'R.	,, 11A.	0 16 0
11 May	,,	,, ,,	,,	M.O'R.	,, 10A.	4 6 0
11 ,,	,,	,, ,,	,,	C.M.	,, 11A.	1 0 0
25 February	Redfern	Local Authority	,,	D.F.S.	,, 11A.	2 3 0
12 ,,	Balmain	,, ,,	,,	J.O'R.	,, 11A.	2 4 0

PRIVATE

PRIVATE HOSPITALS ACT, 1908.

REPORT ON THE OPERATION OF THE ACT FOR THE YEAR ENDED 31st DECEMBER, 1915, BY Dr. A. T. CHAPPLE, ASSISTANT MEDICAL OFFICER OF THE GOVERNMENT.

The Private Hospitals Act came into force on 14th December, 1908, but active operations were delayed until regulations had been framed. These were published in *Government Gazette* No. 120, of 8th September, 1909, and took effect from 15th October of that year.

The Act was passed with the object of bringing under efficient central control all private hospitals throughout the State. No private hospital is now allowed to carry on business unless it is registered by the Department of Public Health, and unless it complies both as to the structure and management with certain conditions laid down in the regulations under the Act. All private hospitals in the country and city are regularly inspected by a departmental medical officer.

When this Act was first brought into operation the Board of Health recognised that a certain amount of leniency must be shown in dealing with establishments that had been in existence, in some cases, for many years prior to the passing of the Act, but where new hospitals have been established since 1st July, 1910, the Department insists that they shall be fully up to the structural requirements laid down by the regulations, and that resident managers shall comply with the requirements of the Act as to personal qualifications.

During the year ended 31st December, 1915, 104 applications for new licenses were received, of which 40 came from Sydney and environs (see Appendix, Table I), and 64 from the remainder of the State (Table II).

The number of applications received during 1915 showed a decrease of 86, compared with the previous year.

The Police were frequently called upon to inspect hospitals and submit information concerning them in accordance with a detailed report form supplied by this Department, pending a visit from a staff medical officer. This course had to be adopted to a greater extent than usual owing to the continuance of the smallpox epidemic, which necessitated the presence of the Departmental officers in Sydney and other places. The position was further accentuated by the absence on active service of several of the medical officers of the staff.

The thanks of the Department are due to the Inspector-General of Police and to the officers under his control throughout the State, for their able assistance in the administration of the Act.

In the metropolis many of the hospitals have been inspected, and those in some country towns have been dealt with when opportunity offered.

Applications for license—How dealt with—Comments.

	New South Wales.	Sydney and environs.	Country.
Applications received	104	40	64
„ refused	15	4	11
„ withdrawn	12	4	8
Licenses issued, 1915	76	31	45
„ withdrawn	42	8	34
„ cancelled	1	...	1

Exemptions granted.—Eleven, viz., Nurses Mathers and Aughtie, Tumbarumba; Carinda Bush Nursing Home, Rye Park; Nurse Smith, Rye Park; Nurse Rouse, Goodooga; Nurse Behan, Oberon; Nurse Todd, Wiseman's Creek; Nurse McMahon, Copeland; Nurse Cumming, Wentworth; Nurse Bowden, Wilcannia; Nurse North, Taralga—a decrease of 1 compared with 1914.

Legal proceedings were taken in five instances for breaches of the Act, with the undermentioned results:—

Balmain—Brownlee, fined £25, 6s. costs.
Tamworth—R. A. Horne, case dismissed.
Walcha—A. A. Gillies, breach Sec. 6 (1), fined £10, 6s. costs.
Wellington—J. Murphy, fined £10, 8s. costs.
Wellington—J. A. Juff, fined £10, 35s. costs.

Licenses existing on 31st December, 1915.—Sydney and environs, 162; remainder of New South Wales, 375; total for the State, 537. This is an increase of 18 on the total existing on 31st December, 1914. Sydney showed an increase of 23, and country districts a decrease of 5. Details of the summary are given in Tables I and II.

Applications refused.—In most cases refusals have been due to the fact that the resident managers were unable to submit certificates of training from recognised maternity or other hospital training schools. In a few instances applications were refused because the characters of the applicants were not wholly above reproach, and sometimes because sufficient accommodation for those resident (exclusive of patients) was not provided.

Applications

Applications withdrawn.—This course was usually the result of applicants being informed that the resident managers nominated by them were not eligible, or that the premises were not suitable.

Licenses relinquished.—In a few cases death has been the cause, but the majority were due to change of residence or disposal of the hospital to another person.

Licenses recalled.—It is satisfactory to note that the Board of Health found it necessary to recall only 1 license during the year. In this case the premises were found on inspection to be unsuitable.

CLASSIFICATION of Private Hospitals Licensed in New South Wales.

	Sydney.	Country.	Total.
Hospitals receiving medical, surgical, and lying-in cases	49	123	172
,, medical and surgical cases	7	12	19
,, lying-in cases only	106	240	346
Hospitals containing 1 bed	19	46	65
,, 2 beds.....	28	89	117
,, 3 ,, ...	18	57	75
,, 4–5 beds	26	79	105
,, 6–10 ,, ...	31	74	105
,, 11–20 ,, ...	21	29	50
,, over 20 ,, ...	19	1	20

The distribution of the hospitals is indicated in detail in the Appendix, Tables III and IV.

Comments.—64·4 per cent. of all the private hospitals in the State are licensed to receive lying-in cases only, being an increase of 1·6 per cent. on the previous year. Of private hospitals licensed in Sydney and environs, 65·4 per cent. are lying-in hospitals, and in the country, 64 per cent.

Qualifications of Licensees and Resident Managers.—Of private hospitals conducted in the State 500 are conducted by licensees who are also resident managers (151 in Sydney and 349 in country districts), and the remainder (37) are those in which the licensee has appointed a resident manager other than himself or herself (11 in Sydney and 26 in country districts).

Qualifications of Licensees.

	Sydney.	Country.
Duly qualified medical practitioners	5	35
Certificated nurses	142	161
Uncertificated persons	15	179

Qualifications of Resident Managers.

	Sydney.	Country.
Duly qualified medical practitioners	2	25
Qualified for approval under Sec. 10 (*a*)	7	12
,, ,, ,, 10 (*b*)	58	56
,, ,, ,, 10 (*c*)	39	26
,, ,, ,, 10 (*d*)	56	256

For details of summary *vide* Appendix, Tables V and VI.

Comments.—Of 312 resident managers approved under Section 10 (*d*) (56 in Sydney and 256 in country districts), 129 are trained nurses and 183 are untrained (14 in Sydney and 169 in country) persons, *i.e.*, who do not possess any hospital certificate at all.

Comments on certain Sections and Regulations under the Act.

Section 11.—Under this Section the following notifiable diseases were reported from licensed hospitals :—

1. *Diphtheria.*—Cowra 1, Chatswood 2, Canowindra 14, Gilgandra 2, Kempsey 1, North Sydney 9, Orange 1, Summer Hill 1; total, 31 cases.
2. *Erysipelas.*—None.
3. *Measles.*—Arncliffe 1, Blayney 1, Chatswood 2, Manly 2, Mullumbimby 1, North Sydney 26, Redfern 1, Summer Hill 1; total, 35 cases.
4. *Puerperal septicaemia.*—Balranald 1, Forest Lodge 1, Singleton 2; total, 4 cases.

Hospitals in which septic puerperal cases occurred were immediately prohibited from receiving further lying-in cases, pending the enforcement of the usual regulations; as a consequence, no second case was infected in any hospital, although in one hospital a second case occurred some time after.

Section 17.—This section still continues to give trouble owing to the wrong interpretation put upon it.

Regulation 12.—Alterations in the arrangement and uses of rooms have entailed a vast amount of work. Additions have also been made to many hospitals.

Regulation 19.—Very few of the licensed hospitals now receive infectious cases, as no special building approved by the Board is provided. This has probably led to the provision made in public hospitals being taxed to a very great degree.

Regulation

Regulation 20.—This provides that "not more than the number and class of patients mentioned in the license shall be received into any private hospital at any one time." A few licensees have been cautioned for breaches of this regulation.

Regulation 24.—A proper register is now found in almost all private hospitals, but in the case of a few hospitals, usually those newly licensed, the register has not been provided; also in some instances the register, though provided, is not kept as it should be; and it has been necessary to issue a warning to such resident managers that the Regulation must be strictly observed.

A. T. CHAPPLE.
Assistant Medical Officer.

APPENDIX.

TABLE I.—Summary of Applications for License under Private Hospitals Act (Sydney and environs), 1915.

District.	Applications.				Licenses.			
	No. received.	No. refused.	No. withdrawn.	No. not dealt with.	No. issued.	No. withdrawn.	No. cancelled.	No. existing.
Annandale	2	...	1	...	1	...	...	3
Ancliffe	...	...	...	1	1	...	...	1
Artarmon	...	...	...	...	...	...	...	1
Ashfield	1	...	...	...	1	...	...	3
Auburn	...	...	...	...	...	...	...	2
Balmain	1	...	...	...	1	1	...	3
Bankstown	1	...	...	...	1	...	...	1
Bondi	1	...	...	...	1	...	...	1
Burwood	1	...	...	...	1	...	...	4
Campsie	1	...	...	...	1	...	...	1
Carlton	1	...	...	...	1	...	...	1
Chatswood	...	...	...	...	...	...	...	3
Croydon	1	...	1	...	...	...	...	1
Darlinghurst	...	...	...	...	...	...	...	9
Drummoyne	...	...	...	...	...	...	...	2
Dulwich Hill	...	...	...	...	...	...	...	2
Eastwood	...	...	...	...	...	...	...	1
Enmore	...	...	...	...	...	...	...	4
Fairfield	...	...	...	...	...	...	...	1
Five Dock	...	...	...	...	...	1	...	1
Forest Lodge	...	...	...	...	...	...	...	3
Gladesville	...	...	...	...	...	...	...	3
Glebe	1	...	...	...	1	...	...	4
Granville	...	...	...	...	...	...	...	1
Guildford	...	...	...	...	...	...	...	1
Haberfield	1	...	...	...	1	...	...	3
Hornsby	...	...	...	...	...	1	...	...
Hunter's Hill	...	...	...	...	...	...	...	2
Hurstville	...	...	...	...	...	...	...	...
Kensington	2	...	...	...	2	...	...	4
Killara	...	...	...	...	...	...	...	1
Kogarah	...	...	...	...	...	...	...	2
Lakemba	1	1	...	...	...	...	...	1
Leichhardt	1	...	...	...	1	...	...	4
Manly	1	...	...	...	1	...	...	8
Marrickville	3	...	1	...	2	...	...	8
Mosman	1	...	...	...	1	...	...	4
Neutral Bay	...	...	...	...	...	1	...	4
Newtown	...	...	...	...	...	...	...	2
North Sydney	4	...	...	...	4	2	...	13
Paddington	2	...	...	...	2	...	...	6
Pennant Hills	...	...	...	...	...	...	...	1
Petersham	1	...	...	...	1	1	...	6
Pyrmont	...	...	...	...	...	...	...	1
Randwick	2	1	1	...	...	...	...	4
Redfern	...	...	...	...	...	...	...	3
Rockdale	1	...	...	...	1	...	...	3
Rose Bay	1	...	...	...	1	...	...	2
Ryde	...	...	...	...	...	...	...	1
Stanmore	1	...	...	...	1	1	...	2
Summer Hill	...	...	...	...	...	...	...	3
Sydney	3	1	...	...	2	...	...	4
Wahroonga	...	...	...	...	...	...	...	1
Waitara	...	...	...	...	...	...	...	1
Waverley	1	...	...	...	1	...	...	7
Willoughby	1	...	...	...	...	...	...	1
Woollahra	2	1	...	...	1	...	...	3
Total	40	4	4	...	31	8	...	162

TABLE II.—Summary of Applications for License under Private Hospitals Act, New South Wales (Sydney and environs excepted), 1915.

District.	Applications.				Licenses.			
	No. received.	No. refused.	No. withdrawn.	No. not dealt with.	No. issued.	No. withdrawn.	No. cancelled.	No. existing.
Abermain	...	...	...	1	...	...	...	1
Adamstown	...	...	...	...	...	...	...	1
Adelong	...	...	...	...	...	...	...	2
Albury	1	1	...	...	...	...	...	4
Ariah Park	...	...	...	...	...	...	...	1
Armidale	...	...	...	...	...	1	...	4
Ballina	...	...	...	...	...	...	...	1
Balranald	1	1	...	...	...	...	...	3
Bangalow	...	...	...	...	...	...	...	2
Barham	...	...	...	...	...	...	...	...
Barmedman	...	...	...	...	...	...	...	1
Barraba	...	...	...	...	...	...	...	3
Bathurst	1	...	...	...	1	...	...	6
Bega	1	1	...	...	...	...	...	1
Bellingen	...	...	...	...	...	...	...	1
Berridale	...	...	...	...	...	...	...	...
Berrigan	...	...	...	...	...	...	...	1
Bingara	1	1	...	...	...	...	...	1
Blackheath	1	...	...	...	1	...	...	1
Blayney	...	...	...	...	...	...	...	2
Bogan Gate	...	...	...	...	...	...	...	1
Boggabri	1	...	...	...	1	...	...	1
Bomaderry	1	...	...	...	1	...	...	2
Bombala	2	...	1	...	1	1	...	1
Bourke	...	...	...	...	...	...	...	2
Bowraville	1	1	...	...	...	...	...	1
Braidwood	...	...	...	...	...	...	...	1
Broken Hill	...	...	...	...	...	...	...	3
Brooklyn	...	...	...	...	...	...	...	1
Brushgrove	...	...	...	...	...	...	...	1
Burrowa	...	...	...	...	...	...	...	1
Byangum	...	...	...	...	...	...	...	1
Byron Bay	...	...	...	...	...	...	...	2
Camden	...	...	...	...	...	1	...	1
Campbelltown	...	...	...	...	...	...	...	2
Canbelego	1	...	...	...	1	...	...	1
Candelo	1	...	...	...	1	1	...	1
Canowindra	1	...	...	...	1	1	...	1
Carcoar	...	...	...	...	...	...	...	1
Casino	...	...	...	...	...	...	...	4
Cessnock	...	...	...	...	...	...	...	1
Cobar	...	...	...	...	...	...	...	...
Coff's Harbour	...	...	...	...	...	...	...	1
Coledale	...	...	...	...	...	...	...	1
Condobolin	...	...	...	...	...	...	...	1
Coolamon	1	...	...	...	1	...	...	1
Cooma	...	...	...	...	...	1	...	1
Coonabarabran	...	...	...	...	...	...	...	2
Coonamble	...	...	...	...	...	...	...	2
Cootamundra	...	...	...	...	...	...	...	4
Coraki	...	...	...	...	...	...	...	2
Corowa	2	...	...	...	2	...	...	4
Corrimal	...	...	...	...	...	1	...	...
Cowra	...	...	...	...	...	...	...	2
Crookwell	...	...	...	...	...	...	...	2
Culcairn	...	...	...	...	...	...	...	2
Cumnock	...	...	...	...	...	...	...	1
Dapto	...	...	...	...	...	...	...	1
Delegate	...	...	...	...	...	...	...	2
Delungra	1	...	...	...	1	1	...	...
Deniliquin	1	...	...	...	1	...	...	3
Denman	1	...	...	...	1	...	...	1
Dorrigo	1	...	1	...	...	...	...	1
Dubbo	...	...	...	...	...	1	...	7
Dungog	1	1	...	...	...	...	...	2
Emmaville	...	...	...	...	...	...	...	1
Forbes	...	...	...	...	...	...	...	2
Ganmain	...	...	...	...	...	...	...	1
Gilgandra	...	...	...	...	...	...	...	2
Glen Ellen	...	...	...	...	...	...	...	1
Glen Innes	1	...	1	...	...	...	...	4
Gosford	...	...	...	...	...	...	...	1
Goulburn	1	1	...	...	...	2	...	6
Grafton	...	...	...	...	...	...	...	10
Grenfell	...	...	...	...	...	...	...	2
Gulgong	...	...	...	...	...	...	...	1
Gundagai	...	...	...	...	...	...	...	3
Gunnedah	...	...	...	...	...	...	...	3
Gunning	...	...	...	...	...	1	...	...
Guyra	...	...	...	...	...	...	...	1
Hamilton	1	...	...	...	1	...	...	2

TABLE II.—Summary of Applications for License under Private Hospitals Act, New South Wales (Sydney and environs excepted), 1915—*continued.*

District.	Applications.				Licenses.			
	No. received.	No. refused.	No. withdrawn.	No. not dealt with.	No. issued.	No. withdrawn.	No. cancelled.	No. existing.
Hay	...	...	...	...	...	...	...	5
Henty	1	...	1	...	...	...	...	2
Holbrook	...	...	...	...	...	...	...	1
Inverell	1	...	...	...	1	1	...	6
Jerilderie	...	...	...	...	...	...	...	1
Junee	...	...	...	...	...	...	...	3
Katoomba	...	...	...	...	...	...	...	2
Kempsey	...	...	...	...	...	1	...	2
Kurri Kurri	...	...	...	...	...	...	...	1
Kyogle	1	...	...	...	1	...	...	2
Lake Cudgellico	...	...	...	...	...	...	...	2
Lawson	...	...	...	...	...	...	...	1
Lecton	...	...	...	...	...	...	...	1
Leura	...	...	...	...	...	...	...	1
Lismore	1	...	1	...	...	...	...	10
Lithgow	...	...	...	...	...	...	...	2
Liverpool	...	...	...	...	...	...	...	2
Lockhart	...	...	...	...	...	...	...	3
Macksville	1	...	...	...	1	...	...	3
Maclean	...	...	...	...	...	...	...	1
Maitland	2	...	...	...	2	1	...	8
Manildra	...	...	...	...	...	1	...	1
Manilla	...	...	...	...	...	...	...	4
Merriwa	...	...	...	...	...	...	...	1
Millthorpe	...	...	...	...	...	...	...	...
Milton	1	1	...	...	...	1	...	1
Moombooldool	...	...	...	...	...	...	...	1
Molong	1	...	...	...	1	...	...	2
Moonan Brook	...	...	...	...	...	...	...	...
Moree	...	...	...	...	...	...	...	3
Morpeth	...	...	...	...	...	...	...	1
Moruya	...	...	...	...	...	1	...	1
Moss Vale	...	...	...	...	...	...	...	3
Mount Victoria	1	...	...	...	1	1	...	...
Mudgee	...	...	...	...	...	...	...	4
Mullumbimby	...	...	...	...	...	...	...	1
Mungindi	...	...	...	...	...	...	...	1
Murrumburrah	...	...	...	...	...	...	...	1
Murrurundi	...	...	...	...	...	1	...	...
Murwillumbah	2	...	1	...	1	1	...	7
Muswellbrook	...	...	...	...	...	...	...	2
Nabiac	1	...	...	...	1	1	...	2
Narrabri	1	...	...	...	1	...	...	3
Narrandera	1	1	...	...	...	...	...	3
Narromine	2	...	1	...	1	...	...	2
Newcastle	...	...	...	...	...	...	...	3
Nowra	...	...	...	...	...	...	...	3
Nyngan	...	...	...	...	...	...	...	2
Orange	1	...	...	...	1	2	...	8
Pambula	...	...	...	...	...	...	...	1
Parkes	...	...	...	...	...	1	...	6
Parramatta	...	...	...	...	...	...	...	3
Peak Hill	...	...	...	...	...	...	...	1
Picton	...	...	...	...	...	...	...	1
Portland	1	...	...	...	1	...	...	1
Port Macquarie	1	...	1	...	...	...	...	1
Queanbeyan	...	...	...	...	...	...	...	1
Quirindi	...	...	...	...	...	...	...	5
Richmond	...	...	...	...	...	...	...	2
Rylstone	1	...	...	...	1	...	...	2
Scone	...	...	...	...	...	...	...	4
Singleton	1	...	...	...	1	1	...	5
St. Mary's	1	...	...	...	1	...	...	1
Stroud	...	...	...	...	...	1	...	...
Tamworth	2	...	...	...	2	...	...	7
Taree	...	...	...	...	...	...	...	2
Temora	1	...	...	...	1	...	...	8
Tenterfield	1	...	...	...	1	...	...	2
Tinonee	...	...	...	...	...	...	...	1
Tooumwal	1	...	...	...	1	...	...	2
Trangie	...	...	...	...	...	...	...	2
Trundle	...	...	...	...	...	...	...	1
Tumut	...	...	...	...	...	...	...	2
Tumblong	1	...	...	...	1	...	...	1
Tuncurry	...	...	...	...	...	...	...	1
Tweed Heads	1	...	...	...	1	...	...	1
Uralla	...	...	...	...	...	1	...	1
Urunga	...	...	...	...	...	...	...	1
Wagga Wagga	2	1	...	...	1	2	...	7
Walla Walla	...	...	...	...	...	...	...	1
Warialda	...	...	...	...	...	...	...	1
Walcha	...	...	...	...	...	...	...	1

TABLE II.—Summary of Applications for License under Private Hospitals Act, New South Wales (Sydney and environs excepted), 1915—*continued.*

District.	Applications.				Licenses.			
	No. received.	No. refused.	No. withdrawn.	No. not dealt with.	No. issued.	No. withdrawn.	No. cancelled.	No. existing.
Warren	...	...	...	...	...	...	...	3
Wauchope	...	...	...	...	...	...	...	1
Wee Waa	...	...	...	...	...	1	...	2
Wellington	1	...	...	...	1	1	...	2
Wentworth Falls	...	...	...	...	...	...	...	1
Whitton	1	...	...	...	1	...	...	1
Wingham	...	...	...	...	...	...	...	1
Wollongong	2	1	...	...	1	...	...	3
Woonona	1	...	...	...	1	...	...	2
Wyalong	...	...	...	...	...	1	...	4
Wyong	...	...	...	...	...	...	...	1
Yass	1	...	...	...	1	...	...	3
Young	1	...	...	...	1	...	...	7
Total	64	11	8	...	45	34	...	375

TABLE III.—Nature of Private Hospitals Licensed in Sydney and environs.

District.	Licenses held.	Medical, Surgical, and Lying-in.	Medical and Surgical.	Lying-in.	Beds.						
					1	2	3	4–5	6–10	11–20	Over 20.
Annandale	3	.....	.....	3	1	...	...	2	...	...	...
Arncliffe	1	1	.....	...	...	...	...	...	1	...	...
Artarmon	1	.....	.....	1	...	...	...	...	1	...	...
Ashfield	3	.....	.....	3	...	1	...	1	1	...	...
Auburn	2	1	.....	1	...	1	1	...	...	...	...
Balmain	3	.....	.....	3	1	...	2	...	...	...	...
Bankstown	1	.....	.....	1	...	1	...	...	...	...	...
Bondi	1	.....	.....	1	...	1	...	...	...	...	...
Burwood	4	1	.....	3	...	...	1	1	1	...	1
Campsie	1	.....	.....	1	...	...	...	1	...	...	...
Chatswood	3	1	.....	2	...	...	1	...	1	1	...
Croydon	1	1	.....	...	...	...	...	...	...	1	...
Darlinghurst	9	7	1	1	1	...	...	1	...	3	4
Drummoyne	2	1	.....	1	...	...	1	...	...	...	1
Dulwich Hill	2	1	.....	1	...	1	...	...	1	...	...
Eastwood	1	1	.....	...	...	...	...	...	1	...	...
Enmore	4	.....	.....	4	...	3	...	...	1	...	...
Fairfield	1	.....	.....	1	1	...	...	...	...	...	...
Five Dock	1	.....	.....	1	...	...	1	...	...	...	...
Forest Lodge	3	.....	.....	3	...	3	...	...	...	...	...
Gladesville	3	.....	1	2	1	1	...	...	1	...	...
Glebe	4	1	.....	3	...	...	...	1	2	1	...
Gore Hill	1	.....	.....	1	1	...	...	...	...	...	...
Granville	1	.....	.....	1	1	...	...	...	...	...	...
Guildford	1	.....	.....	1	...	1	...	...	...	...	...
Haberfield	3	1	.....	2	...	...	...	2	1	...	...
Hunter's Hill	2	1	1	...	...	...	...	1	...	...	1
Kensington	4	.....	.....	4	...	2	...	1	1	...	...
Killara	1	1	.....	...	...	...	...	...	...	1	...
Kogarah	2	1	.....	1	...	...	1	...	...	1	...
Leichhardt	4	1	.....	3	3	...	...	...	...	1	...
Manly	8	5	.....	3	...	...	2	1	2	3	...
Marrickville	8	.....	1	7	...	2	1	1	3	1	...
Mosman	4	3	1	1	...	...	1	2	...	1	1
Neutral Bay	4	3	.....	1	...	...	1	...	1	2	...
Newtown	2	.....	.....	2	...	...	1	...	1	...	...
North Sydney	13	6	.....	7	...	2	...	4	2	3	2
Paddington	6	1	1	4	1	1	1	1	...	1	1
Pennant Hills	1	.....	1	...	...	...	...	1	...	...	...
Petersham	6	.....	1	5	1	2	...	1	1	...	1
Pyrmont	1	.....	.....	1	1	...	...	...	...	...	...
Randwick	4	2	.....	2	...	1	...	...	...	1	2
Redfern	3	1	.....	2	1	...	...	...	1	1	...
Rockdale	3	.....	.....	3	...	2	...	1	...	...	...
Rose Bay	2	.....	.....	2	1	...	...	1	...	...	...
Ryde	1	.....	.....	1	...	...	...	...	1	...	...
Stanmore	2	1	.....	1	...	...	...	1	...	...	1
Summer Hill	3	1	.....	2	...	1	...	...	1	...	1
Sydney	4	3	.....	1	1	...	...	...	1	...	2
Wahroonga	1	1	.....	...	...	...	...	...	...	...	1
Waitara	2	.....	.....	2	2	...	...	...	...	...	...
Waverley	7	.....	.....	7	1	...	1	2	3	...	...
Woollahra	3	1	.....	2	...	2	...	...	...	1	...
Willoughby	1	.....	.....	1	...	...	1	...	...	...	...
Total	162	49	7	106	19	28	18	26	31	21	19

TABLE IV.—Nature of Private Hospitals Licensed in New South Wales (Sydney and environs excepted), 1915.

District.	Licenses held.	Medical, Surgical, and Lying-in.	Medical and Surgical.	Lying-in.	Beds.						
					1	2	3	4–5	6–10	11–20	Over 20.
Abermain	1	.....	.....	1	1	...	...	...	...	...	...
Adamstown	1	.....	.....	1	...	1	...	...	...	...	...
Adelong	2	.....	.....	2	...	1	1	...	...	...	...
Albury	4	4	.....	...	...	...	...	...	3	1	...
Ariah Park	1	.....	.....	1	...	...	1	...	...	...	...
Armidale	4	1	.....	3	...	1	1	1	...	1	...
Ballina	1	1	.....	...	...	...	...	...	1	...	...
Balranald	3	.....	.....	3	2	1	...	...	...	...	...
Bangalow	2	2	.....	...	...	...	...	1	1	...	...
Barmedman	1	1	.....	...	...	...	1	...	...	...	...
Barraba	3	.....	.....	3	...	2	1	...	...	...	...
Bathurst	6	1	.....	5	1	2	...	1	1	1	...
Bega	1	1	.....	...	...	...	...	...	1	...	...
Bellingen	1	1	.....	...	...	...	...	...	1	...	...
Berrigan	1	.....	.....	1	...	1	...	...	...	...	...
Bingara	1	.....	.....	1	...	1	...	...	...	...	...
Blackheath	1	.....	1	...	1	...	...	...	...	...	...
Blayney	2	1	.....	1	...	...	...	2	...	...	...
Bogan Gate	1	.....	.....	1	1	...	...	...	...	...	...
Boggabri	1	.....	.....	1	1	...	...	...	...	...	...
Bomaderry	2	.....	.....	2	...	...	...	2	...	...	...
Bombala	1	.....	.....	1	...	...	...	1	...	...	...
Bourke	2	.....	.....	2	...	1	1	...	...	...	...
Bowraville	1	1	.....	...	...	...	...	...	1	...	...
Braidwood	1	.....	.....	1	...	1	...	...	...	...	...
Brooklyn	1	.....	.....	1	...	...	1	...	...	...	...
Broken Hill	3	3	.....	...	...	...	...	1	2	...	...
Brushgrove	1	1	.....	...	...	...	...	...	1	...	...
Burrowa	1	.....	.....	1	1	...	...	...	...	...	...
Byron Bay	2	2	.....	...	...	1	...	1	...	...	...
Byangum	1	.....	.....	1	...	1	...	...	...	...	...
Camden	1	.....	.....	1	...	1	...	...	...	...	...
Campbelltown	2	1	.....	1	...	1	...	1	...	...	...
Canbelego	1	.....	.....	1	...	...	...	1	...	...	...
Candelo	1	.....	.....	1	...	...	...	1	...	...	...
Canowindra	1	1	.....	...	...	...	...	...	1	...	...
Carcoar	1	1	.....	...	...	...	...	...	1	...	...
Casino	4	2	.....	2	...	1	1	...	2	...	...
Cessnock	1	.....	.....	1	...	...	...	1	...	...	...
Coff's Harbour	1	1	.....	...	...	...	...	...	...	1	...
Coledale	1	.....	.....	1	...	1	...	...	...	...	...
Condobolin	1	.....	.....	1	...	...	1	...	...	...	...
Coolamon	1	.....	.....	1	...	...	1	...	...	...	...
Cooma	1	1	.....	...	...	...	...	...	1	...	...
Coonabarabran	2	1	.....	1	...	1	...	...	1	...	...
Coonamble	2	2	.....	...	...	...	...	...	2	...	...
Cootamundra	4	3	.....	1	1	...	1	...	1	1	...
Coraki	2	1	.....	1	...	...	...	1	1	...	...
Corowa	4	4	.....	...	...	...	...	...	2	2	...
Corrimal	.....	.....	.....	...	...	...	...	...	...	...	...
Cowra	2	.....	.....	2	...	1	1	...	...	...	...
Crookwell	2	1	.....	1	1	...	...	1	...	...	...
Culcairn	2	1	.....	1	1	...	1	...	...	...	...
Cumnock	1	1	.....	...	...	...	...	1	...	...	...
Dapto	1	1	.....	...	...	...	1	...	...	...	...
Delegate	2	.....	.....	2	...	1	1	...	...	...	...
Deniliquin	3	.....	.....	3	1	1	...	1	...	...	...
Denman	1	1	.....	...	...	...	...	1	...	...	...
Dorrigo	1	.....	.....	1	1	...	...	...	...	...	...
Dubbo	7	2	1	4	...	2	1	1	1	2	...
Dungog	2	.....	.....	2	1	1	...	...	...	...	...
Emmaville	1	.....	.....	1	...	...	1	...	...	...	...
Forbes	2	1	.....	1	1	...	...	1	...	...	...
Ganmain	1	1	.....	...	...	...	...	...	1	...	...
Gilgandra	2	2	.....	...	...	...	...	1	1	...	...
Glen Ellen	1	.....	.....	1	...	1	...	...	...	...	...
Glen Innes	4	1	.....	3	1	1	...	...	2	...	...
Gosford	1	1	.....	...	...	...	...	...	1	...	...
Goulburn	6	2	.....	4	2	1	...	1	...	2	...
Grafton	10	3	.....	7	...	2	3	2	1	2	...
Grenfell	2	.....	.....	2	...	...	2	...	...	...	...
Gulgong	1	1	.....	...	...	...	...	1	...	...	...
Gundagai	3	.....	1	2	...	...	1	1	1	...	...
Gunnedah	3	.....	.....	3	...	...	1	2	...	...	...
Guyra	1	1	.....	...	...	...	...	1	...	...	...
Hamilton	2	.....	.....	2	...	1	1	...	...	...	...
Hay	5	1	.....	4	1	2	1	1	...	...	...
Henty	2	1	.....	1	1	...	...	1	...	...	...
Holbrook	1	1	.....	...	...	...	...	...	1	...	...
Inverell	6	2	1	3	1	1	1	2	1	1	...
Jerilderie	1	.....	.....	1	1	...	...	...	...	...	...
Junee	3	.....	.....	3	...	...	2	...	1	...	...
Katoomba	2	2	.....	...	...	...	...	...	1	1	...
Kempsey	2	2	.....	...	...	...	...	...	1	1	...

TABLE IV.—Nature of Private Hospitals Licensed in New South Wales (Sydney and environs excepted), 1915—*continued.*

District.	Licenses held.	Medical, Surgical, and Lying-in.	Medical and Surgical.	Lying-in.	Beds.						
					1	2	3	4–5	6–10	11–20	Over 20.
Kurri Kurri	1	.....	.....	1	1	...	...	...	...	...	...
Kyogle	2	1	.....	1	...	1	...	...	...	1	...
Lake Cudgellico	2	1	.....	1	...	2	...	...	...	...	...
Lawson	1	1	.....	...	...	...	...	...	1	...	...
Leeton	1	.....	.....	1	...	...	...	1	...	...	...
Leura	1	.....	1	...	...	...	...	...	...	1	...
Lismore	10	4	.....	6	...	...	2	2	2	4	...
Lithgow	2	.....	.....	2	1	...	...	1	...	...	...
Liverpool	2	.....	.....	2	1	1	...	...	...	...	...
Lockhart	3	2	.....	1	1	...	...	...	2	...	...
Macksville	3	.....	.....	3	...	2	...	1	...	...	...
Maclean	1	.....	.....	1	...	...	1	...	...	...	...
Maitland	8	1	1	6	1	5	...	...	2	...	...
Manildra	1	1	.....	...	...	1	...	...	...	...	...
Manilla	4	1	.....	3	...	1	1	2	...	...	...
Merriwa	1	.....	.....	1	...	1	...	...	...	...	...
Milton	1	.....	.....	1	1	...	...	...	...	...	...
Molong	2	1	.....	1	...	2	...	...	...	...	...
Moree	3	1	.....	2	...	...	1	...	1	1	...
Morpeth	1	.....	.....	1	...	1	...	...	...	...	...
Moruya	1	.....	.....	1	...	...	...	1	...	...	...
Moss Vale	3	.....	.....	3	2	1	...	...	...	...	...
Mudgee	4	3	.....	1	...	...	...	2	2	...	...
Mullumbimby	1	1	.....	...	...	...	...	...	1	...	...
Mungindi	1	.....	.....	1	...	1	...	...	...	...	...
Murrumburrah	1	1	.....	...	...	...	...	1	...	...	...
Murwillumbah	7	2	.....	5	...	1	2	2	2	...	...
Muswellbrook	2	2	.....	...	...	...	...	1	1	...	...
Nabiac	3	2	.....	1	1	1	...	...	1	...	...
Narrabri	3	1	.....	2	...	...	...	2	1	...	...
Narrandera	3	1	.....	2	...	1	...	1	...	1	...
Narromine	2	1	.....	1	...	1	...	1	...	...	...
Newcastle	3	1	.....	2	1	...	1	...	1	...	...
Nowra	3	1	.....	2	...	1	1	...	1	...	...
Nyngan	2	1	.....	1	...	...	1	...	1	...	...
Orange	8	2	.....	6	...	2	...	4	1	1	...
Pambula	1	.....	.....	1	...	...	1	...	...	...	...
Parkes	6	2	.....	4	1	3	...	1	1	...	...
Parramatta	3	.....	.....	3	1	...	1	...	1	...	...
Peak Hill	1	.....	.....	1	...	...	...	1	...	...	...
Picton	1	1	.....	...	...	...	...	1	...	...	...
Portland	1	.....	.....	1	...	1	...	...	...	...	...
Port Macquarie	1	1	.....	...	...	1	...	...	...	...	...
Queanbeyan	1	.....	.....	1	...	...	1	...	...	...	...
Quirindi	5	.....	.....	5	1	3	...	...	1	...	...
Richmond	2	1	.....	1	...	...	1	...	...	...	1
Rylstone	2	1	.....	1	...	...	1	1	...	...	...
Scone	4	2	.....	2	...	1	1	1	1	...	...
Singleton	5	1	.....	4	...	1	1	2	1	...	...
St. Mary's	1	.....	.....	1	...	...	1	...	...	...	...
Tamworth	7	1	1	5	1	1	...	1	4	...	...
Taree	2	2	.....	...	...	...	...	...	1	1	...
Temora	8	1	1	6	2	1	1	3	1	...	...
Tenterfield	2	1	.....	1	...	1	...	...	1	...	...
Tinonee	1	.....	.....	1	...	...	1	...	...	...	...
Tocumwal	2	1	.....	1	...	...	...	2	...	...	...
Trangie	2	2	.....	...	...	1	...	...	1	...	...
Trundle	1	.....	.....	1	...	...	...	1	...	...	...
Tumblong	1	.....	.....	1	1	...	...	...	...	...	...
Tumut	2	.....	.....	2	...	...	2	...	...	...	...
Tuncurry	1	.....	.....	1	1	...	...	...	...	...	...
Tweed Heads	1	.....	.....	1	...	1	...	...	...	...	...
Uralla	1	.....	.....	1	...	...	...	1	...	...	...
Urunga	1	.....	.....	1	1	...	...	...	...	...	...
Wagga Wagga	7	1	.....	6	1	...	2	3	...	1	...
Walcha	1	.....	.....	1	...	...	1	...	...	...	...
Walla Walla	1	.....	1	...	...	...	...	1	...	...	...
Warialda	1	.....	.....	1	...	1	...	...	...	...	...
Warren	3	1	.....	2	1	1	...	1	...	...	...
Wauchope	1	.....	.....	1	...	1	...	...	...	...	...
Wee Waa	2	.....	.....	2	...	2	...	...	...	...	...
Wellington	2	1	.....	1	...	1	...	...	1	...	...
Wentworth Falls	1	.....	1	...	...	...	...	...	...	1	...
Whitton	1	.....	.....	1	...	1	...	...	...	...	...
Wingham	1	.....	.....	1	...	...	...	...	1	...	...
Wollongong	3	2	.....	1	1	...	1	...	1	...	...
Woonona	2	.....	.....	2	...	2	...	...	...	...	...
Wyalong	4	1	.....	3	...	...	2	1	1	...	...
Wyong	1	.....	.....	1	...	...	1	...	...	...	...
Yass	3	.....	.....	3	1	2	...	...	...	...	...
Young	7	.....	2	5	1	3	...	2	...	1	...
Total	375	123	12	240	46	89	57	79	74	29	1

TABLE V.—Qualifications of Licensees and Resident Managers of Private Hospitals Licensed in Sydney and environs, 1915.

District.	Licensee and R.M. identical.	Licensee and R.M. different.	Licensees.			Resident Managers.					
			Duly qualified M.P.	Qualified Nurses.	Unqualified persons.	Duly qualified M.P.	Under Section—				
							10 (*a*).	10 (*b*).	10 (*c*).	10 (*d*).	
										(1)	(2)
Annandale	2	1	...	2	1	...	...	1	...	1	1
Arncliffe	1	...	...	1	...	...	...	...	...	1	...
Artarmon	1	...	...	1	...	...	...	...	1	...	...
Ashfield	2	1	...	2	1	...	...	1	...	2	...
Auburn	2	...	...	2	...	...	...	...	...	2	...
Bankstown	1	...	...	1	...	...	...	1	...	...	...
Balmain	3	...	...	1	2	...	...	1	...	...	2
Burwood	4	...	...	4	...	...	...	1	1	2	...
Bondi	1	...	...	1	...	...	...	1	...	...	...
Campsie	1	...	...	1	...	...	...	1	...	...	...
Chatswood	3	...	...	3	...	...	...	1	1	...	1
Croydon	1	...	...	1	...	...	...	1	...	...	...
Darlinghurst	8	1	...	9	...	...	1	...	7	1	...
Drummoyne	1	1	1	1	...	...	...	1	1	...	...
Dulwich Hill	2	...	...	2	...	...	...	1	1	...	...
Eastwood	1	...	...	1	...	...	...	...	1	...	...
Enmore	4	...	...	4	...	...	...	1	...	3	...
Fairfield	1	...	...	1	...	...	...	1	...	...	...
Forest Lodge	3	...	...	3	...	...	...	...	...	3	...
Five Dock	1	...	...	1	...	...	...	1	...	...	...
Gladesville	3	...	...	3	...	...	...	1	...	2	...
Glebe	4	...	...	4	...	...	...	2	1	1	...
Gore Hill	1	...	...	1	...	...	...	1	...	...	...
Granville	1	...	...	1	...	...	...	1	...	1	...
Guildford	1	...	...	...	1	...	...	...	...	...	1
Haberfield	3	...	...	3	...	...	...	1	1	...	1
Hunter's Hill	2	...	1	1	...	...	1	...	...	1	...
Kensington	4	...	...	3	1	...	...	3	...	...	1
Killara	1	...	...	1	...	...	...	...	1	...	...
Kogarah	2	...	...	1	1	...	...	...	1	...	1
Leichhardt	4	...	...	4	...	...	...	1	1	2	...
Manly	7	1	1	6	1	...	...	2	5	...	1
Marrickville	8	...	...	8	...	...	...	7	...	...	1
Mosman	4	...	...	4	...	...	1	1	...	2	...
Newtown	2	...	...	2	...	...	...	2	...	...	...
Neutral Bay	4	...	...	4	...	...	...	1	1	2	...
North Sydney	12	1	...	12	1	...	1	5	5	1	1
Paddington	5	1	1	5	...	...	1	3	1	1	...
Pennant Hills	1	...	...	1	...	...	...	...	...	1	...
Petersham	5	1	...	4	2	...	2	2	...	...	2
Pyrmont	1	...	...	1	...	...	...	...	...	1	...
Randwick	4	...	...	4	...	...	...	...	2	2	...
Redfern	3	...	...	2	1	...	...	1	...	1	1
Rockdale	3	...	...	3	...	...	...	3	...	...	...
Rose Bay	2	...	...	2	...	...	...	2	...	...	...
Ryde	1	...	...	1	...	...	...	1	...	...	...
Stanmore	2	...	...	2	...	...	...	1	1	...	...
Summer Hill	3	...	...	3	...	...	...	1	1	1	...
Sydney	4	...	1	3	...	1	...	...	3	...	...
Wahroonga	...	1	...	...	1	1	...	...	...	...	...
Waitara	2	...	...	2	...	...	...	...	1	1	...
Waverley	6	1	...	6	1	...	...	2	...	5	...
Willoughby	1	...	...	1	...	...	...	...	...	1	...
Woollahra	2	1	...	2	1	...	...	1	1	1	...
Total	151	11	5	142	15	2	7	58	39	42	14

R.M. signifies Resident Manager; M.P. duly qualified Medical Practitioner. (1) Signifies Nurse qualified, but not strictly in accordance with requirements of Act. (2) Signifies unqualified persons approved under special circumstances.

TABLE VI.—Qualifications of Licensees and Resident Managers of Private Hospitals Licensed in New South Wales (Sydney and environs excepted), 1915.

District.	Licensee and R.M. identical.	Licensee and R.M. different.	Licensees.			Resident Managers.					
			Duly qualified M.P.	Qualified Nurses.	Unqualified persons.	Duly qualified M.P.	Under Section—				
							10 (a).	10 (b).	10 (c).	10 (d).	
										(1)	(2)
Abermain	1	...	...	1	...	...	...	1	...	...	...
Adamstown	1	...	...	1	...	...	...	...	...	1	...
Adelong	2	...	1	...	1	...	...	1	...	...	1
Albury	4	...	1	3	...	1	...	...	...	3	...
Ariah Park	...	1	1	...	...	...	...	1	...	...	...
Armidale	4	...	...	2	2	...	...	...	1	1	2
Ballina	1	...	...	1	...	...	...	...	1	...	...
Balranald	3	...	...	...	3	...	...	...	...	...	3
Bangalow	2	...	2	...	...	2	...	...	...	...	...
Barmedman	1	...	1	...	...	1	...	...	...	...	...
Barraba	3	...	...	1	2	...	...	1	...	...	2
Bathurst	5	1	1	3	2	1	1	...	...	2	2
Bega	1	...	...	1	...	...	...	...	...	1	...
Bellingen	1	...	...	1	...	...	...	...	...	1	...
Berrigan	1	...	...	...	1	...	...	...	...	...	1
Bingara	1	...	...	...	1	...	...	...	...	...	1
Blackheath	1	...	1	...	...	...	1	...	...	...	...
Blayney	2	...	...	1	1	...	...	...	...	1	1
Bogan Gate	1	...	...	...	1	...	...	...	...	...	1
Boggabri	1	...	...	...	1	...	...	...	...	...	1
Bomaderry	2	...	...	1	1	...	...	1	...	1	...
Bombala	1	...	...	...	1	...	...	...	...	...	1
Bourke	2	...	...	...	2	...	...	...	...	...	2
Bowraville	1	...	1	...	...	1	...	...	...	...	...
Braidwood	1	...	...	...	1	...	...	...	...	...	1
Broken Hill	3	...	...	2	1	...	...	...	...	2	1
Brooklyn	1	...	...	...	1	...	...	...	...	...	1
Brushgrove	1	...	1	...	...	1	...	...	...	...	...
Burrowa	1	...	...	...	1	...	...	...	...	...	1
Byangum	1	...	...	...	1	...	...	...	...	...	1
Byron Bay	2	1	1	1	1	1	...	...	...	1	1
Camden	1	...	...	...	1	...	...	...	...	...	1
Campbelltown	2	...	...	1	1	...	...	...	1	...	1
Canbelego	1	...	...	...	1	...	...	...	...	...	1
Candelo	1	...	...	...	1	...	...	...	...	...	1
Canowindra	1	...	...	1	...	...	...	...	1	...	...
Carcoar	1	...	...	1	...	...	...	1	...	...	...
Casino	4	...	...	2	2	...	...	...	2	...	2
Cessnock	1	...	...	1	...	...	...	...	1	...	...
Coff's Harbour	1	...	1	...	...	1	...	...	...	...	...
Coledale	1	...	...	...	1	...	...	...	...	...	1
Condobolin	1	...	...	1	...	...	...	1	...	...	...
Coolamon	1	...	...	1	...	...	...	...	...	1	...
Cooma	1	...	...	1	...	...	...	...	1	...	...
Coonabarrabran	2	...	...	1	1	...	...	...	...	1	1
Coonamble	2	...	2	...	...	2	...	...	...	...	...
Cootamundra	4	...	...	2	2	...	...	...	...	2	2
Coraki	2	...	...	...	2	...	...	...	...	...	2
Corowa	2	2	2	...	2	2	...	...	...	2	...
Cowra	2	...	...	1	1	...	...	...	...	1	1
Crookwell	2	...	...	1	1	...	...	...	1	...	1
Culcairn	2	...	...	1	1	...	...	...	...	1	1
Cumnock	1	...	1	...	...	1	...	...	...	...	...
Dapto	1	...	...	...	1	...	...	...	...	...	1
Delegate	2	...	...	...	2	...	...	...	...	...	2
Deniliquin	3	...	...	1	2	...	...	...	1	...	2
Denman	1	...	1	...	...	...	...	...	1	...	...
Dorrigo	1	...	...	...	1	...	...	...	...	...	1
Dubbo	7	...	...	4	3	...	...	1	...	3	3
Dungog	2	...	...	...	2	...	...	...	...	...	2
Emmaville	1	...	...	...	1	...	...	...	...	...	1
Forbes	2	...	...	1	1	...	...	...	...	1	1
Ganmain	1	...	...	...	1	...	...	...	...	...	1
Gilgandra	1	1	1	1	...	...	...	...	...	2	...
Glen Ellen	1	...	...	...	1	...	...	...	...	...	1
Glen Innes	4	...	...	1	3	...	...	...	...	1	3
Gosford	1	...	...	1	...	...	...	...	...	...	1
Goulburn	5	1	...	3	3	1	...	1	1	1	2
Grafton	10	...	...	5	5	...	1	1	...	4	4
Grenfell	2	...	...	...	2	...	...	...	...	...	2
Gulgong	1	...	...	...	1	...	...	...	...	...	1
Gundagai	2	1	...	2	1	...	1	...	...	1	1
Gunnedah	3	...	...	1	2	...	...	1	...	...	2
Guyra	1	...	...	1	...	...	...	...	...	1	...
Hamilton	2	...	...	1	1	...	...	1	...	...	1
Hay	5	...	...	1	4	...	...	1	...	...	4
Henty	2	...	1	...	1	1	...	...	...	...	1
Holbrook	1	...	...	1	...	...	...	...	...	1	...
Inverell	5	1	...	4	2	...	1	1	...	2	2
Jerilderie	1	...	...	...	1	...	...	...	...	...	1
Junee	2	1	...	2	1	...	...	2	...	...	1
Katoomba	2	...	...	2	...	...	...	...	1	1	...
Kempsey	1	1	1	1	...	1	...	1	...	...	...

R.M. signifies Resident Manager; M.P., duly qualified Medical Practitioner. (1) Signifies Nurse qualified, but not strictly in accordance with requirements of Act. (2) Signifies unqualified persons approved under special circumstances.

TABLE VI.—Qualifications of Licensees and Resident Managers of Private Hospitals Licensed in New South Wales (Sydney and environs excepted), 1915—*continued.*

Districts.	Licensee and R.M. identical.	Licensee and R.M. different.	Licensees.			Resident Managers.					
			Duly qualified M.P.	Qualified Nurses.	Unqualified persons.	Duly qualified M.P.	Under Section—				
							10 (*a*).	10 (*b*).	10 (*c*).	10 (*d*). (1)	10 (*d*). (2)
Kurri Kurri	1	...	...	1	...	...	...	...	...	1	...
Kyogle	1	1	1	...	1	1	...	...	...	1	...
Lake Cudgellico	2	...	...	1	1	...	...	...	...	1	1
Lawson	1	...	...	1	...	...	...	...	1	...	...
Leeton	1	...	...	1	...	...	...	1	...	...	...
Leura	1	...	...	1	...	...	1	...	...	...	...
Lismore	10	...	...	6	4	...	...	1	...	5	4
Lithgow	2	...	...	1	1	...	...	...	...	1	1
Liverpool	2	...	...	1	1	...	...	1	...	...	1
Lockhart	3	...	2	...	1	2	...	...	...	...	1
Macksville	3	...	...	...	3	...	...	...	...	...	3
Maclean	1	...	...	1	...	...	...	1	...	...	...
Maitland	8	...	...	4	4	...	1	3	...	1	3
Manildra	1	...	1	...	...	1	...	...	...	...	...
Manilla	4	...	...	2	2	...	...	2	...	1	1
Merriwa	1	...	...	1	...	...	...	1	...	...	...
Milton	1	...	...	...	1	...	...	...	...	...	1
Molong	2	...	...	1	1	...	...	1	...	...	1
Moree	3	...	...	2	1	...	...	1	...	1	1
Morpeth	1	...	...	1	...	...	...	1	...	...	...
Moruya	1	...	...	...	1	...	...	...	...	...	1
Moss Vale	3	...	...	2	1	...	...	...	...	2	1
Mudgee	4	...	...	3	1	...	...	...	1	2	1
Mullumbimby	1	...	...	1	...	...	...	...	1	...	...
Mungindi	1	...	...	...	1	...	...	...	...	...	1
Murrumburrah	...	1	1	...	...	...	...	...	...	1	...
Murwillumbah	5	2	1	2	4	1	...	3	...	1	2
Muswellbrook	2	...	...	1	1	...	...	1	...	...	1
Nabiac	3	...	...	2	1	...	...	...	1	1	1
Narrabri	2	...	...	1	1	...	...	...	1	...	1
Narrandera	3	...	...	1	2	...	...	...	...	1	2
Narromine	2	...	...	2	...	...	...	1	...	1	...
Newcastle	3	...	...	2	1	...	...	1	...	1	1
Nowra	3	...	...	2	1	...	...	1	...	1	1
Nyngan	2	...	...	1	1	...	...	...	...	1	1
Orange	7	1	...	3	5	...	...	1	1	2	4
Pambula	1	...	...	...	1	...	...	...	...	...	1
Parkes	6	...	...	2	4	...	...	...	1	1	4
Parramatta	3	...	...	2	1	...	...	1	...	1	1
Peak Hill	1	...	...	...	1	...	...	...	...	...	1
Picton	1	...	...	1	...	...	...	...	...	1	...
Portland	1	...	...	1	...	...	1	...	...	...	...
Port Macquarie	1	...	...	1	...	...	...	...	...	1	...
Queanbeyan	1	...	...	...	1	...	...	...	...	...	1
Quirindi	5	...	...	2	3	...	...	1	...	1	3
Richmond	1	1	1	...	1	...	...	...	1	...	1
Rylstone	2	...	...	1	1	...	...	1	...	...	1
Scone	4	...	...	2	2	...	...	...	1	1	2
Singleton	4	1	...	2	3	...	...	1	...	1	3
St. Mary's	1	...	...	1	...	...	...	1	...	...	...
Tamworth	6	1	...	6	1	...	1	2	1	1	2
Taree	2	...	...	1	1	...	...	...	...	1	1
Temora	8	...	1	2	5	1	...	1	1	1	4
Tenterfield	1	1	...	1	1	...	...	1	...	1	...
Tinonee	1	...	...	...	1	...	...	...	...	...	1
Tocumwal	1	1	1	...	1	...	...	...	...	1	1
Trangie	2	...	1	1	...	1	...	...	1	...	...
Trundle	...	1	1	...	...	...	...	...	...	1	...
Tumut	2	...	...	1	1	...	...	1	...	...	1
Tumblong	1	...	...	...	1	...	...	...	...	...	1
Tuncurry	1	...	...	...	1	...	...	...	...	...	1
Tweed Heads	1	...	...	...	1	...	...	...	...	...	1
Uralla	1	...	...	...	1	...	...	...	...	...	1
Urunga	1	...	...	...	1	...	...	...	...	...	1
Wagga Wagga	7	...	...	4	3	...	...	2	1	1	3
Wallaia	1	...	...	1	...	...	...	1	...	...	...
Walla Walla	...	1	1	...	...	...	...	...	...	...	1
Warialda	1	...	...	...	1	...	...	...	...	...	1
Warren	3	...	...	...	3	...	...	...	...	...	3
Wauchope	1	...	...	1	...	...	...	1	...	...	...
Wee Waa	2	...	...	1	1	...	...	...	...	1	1
Wellington	1	1	...	1	1	...	...	1	...	...	1
Wentworth Falls	...	1	1	...	...	...	1	...	...	...	...
Whitton	1	...	...	...	1	...	...	...	...	...	1
Wingham	1	...	...	1	...	...	...	...	...	1	...
Wollongong	3	...	...	3	...	...	1	...	...	2	...
Woonona	2	...	...	...	2	...	...	...	...	...	2
Wyalong	4	...	...	2	2	...	...	...	...	2	2
Wyong	1	...	...	1	...	...	...	1	...	...	...
Yass	3	...	...	1	2	...	...	1	...	...	2
Young	6	1	1	3	3	1	1	1	...	1	3
Total	349	26	35	161	179	25	12	56	26	87	169

R.M. signifies Resident Manager; M.P., duly qualified Medical Practitioner. (1) Signifies Nurse qualified, but not strictly in accordance with requirements of Act. (2) Signifies unqualified persons approved under special circumstances.

INFECTIOUS DISEASES PREVALENT IN NEW SOUTH WALES DURING THE YEAR ENDED 31ST DECEMBER, 1915.

UNDER the Public Health Act, Part III, the Governor may by Proclamation in the *Gazette* declare that any disease therein named is an infectious disease This Part of the Act was brought into operation on 1st January, 1898, when scarlet fever, typhoid fever, and diphtheria were proclaimed infectious diseases for the purposes of the Act. In 1900, bubonic plague was added to the list; and infantile paralysis (acute anterior poliomyelitis) in 1912. During the present year two other diseases (acute malarial fever and epidemic cerebro-spinal fever—meningococcal meningitis) were proclaimed as infectious. The diseases at present ordinarily notifiable under the Public Health Act, 1902, are :—

Typhoid fever	Notifiable from	1st January, 1898.
Scarlet fever		
Diphtheria of membranous croup... ...		
Bubonic plague	„	23rd January, 1900.
Infantile paralysis (acute anterior poliomyelitis)	„	1st February, 1912.
Acute malarial fever	„	17th March, 1915.
Epidemic cerebro-spinal fever (meningococcal meningitis)	„	11th October, 1915.

The notified cases of the diseases above mentioned, and the deaths therefrom, are recorded in the Tables which follow (p.p. 67–75).

Tuberculosis was made notifiable in the City of Sydney on the 18th October, 1904, the Sydney Municipal Council making by-laws for the purpose under the Sydney Corporation Act. These by-laws required that medical practitioners should notify all cases of pulmonary tuberculosis occurring within the city area seen or attended by them. A return of the cases notified within the City of Sydney from the 1st January, 1905, is shown in Table VI (p. 75).

By proclamation under the Public Health (Amendment Act, 1915), pulmonary tuberculosis was made notifiable in the Metropolitan and Hunter River combined sanitary districts from 11th August, 1915; at present it is not notifiable elsewhere in the State.

Smallpox.—A Report on an "Outbreak of Mild Smallpox in New South Wales, 1913–1915," will be found on p. 124.

The Public Health Act, 1902, Part III, Division 2, requires that "on the appearance of any case of smallpox, or eruptive fever which may reasonably be supposed to be smallpox . . . . the medical practitioner attending the case shall immediately report in writing such case." Under the Public Health (Amendment) Act, 1915, provision is made whereby districts in which cases of smallpox occur may be proclaimed infected areas, and steps may be taken to segregate or isolate the persons within such areas, and to prevent ingress into or egress therefrom except under prescribed conditions.

Leprosy.—The Twenty-fifth Annual Report on Leprosy in New South Wales is contained in Part IV (p. 142). Medical practitioners in attendance on cases of leprosy or suspected leprosy are required to notify the cases in writing under the provisions of the Public Health Act, 1902, Part III, Division 2.

Bubonic Plague.—No case of plague in man has occured in New South Wales since 1908. A watch is kept on rats in the city and in the vicinity of wharves, and returns in this connection will be found on p. 199. No infected rat has been found since 1910.

TABLE I.—Showing the number of Notified Cases of, and Deaths from, the following diseases—Cerebro-spinal Fever (Meningococcal Meningitis), Diphtheria and Membranous Croup, Infantile Paralysis (Acute Anterior Poliomyelitis), Acute Malarial Fever, Malaria Fever, Scarlet Fever, Typhoid Fever, and Tuberculosis—in the Metropolitan Combined District for the year ended 31st December, 1915.

Metropolitan District.	Typhoid Fever.		Scarlet Fever.		Diphtheria.		Infantile Paralysis.		Malaria.		Cerebro-Spinal Fever.*		Tuberculosis.†	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
MUNICIPALITIES.														
Sydney (City of)	113	13	530	12	442	19	4	...	31	...	5	5	100	...
Alexandria	22	5	93	1	26	2	1	...	1	...	...	...	2	...
Annandale	2	...	68	...	47	1	1	1	...	...	1	...	3	...
Ashfield	7	3	115	2	23	1	...	...	...	...	1	1	10	...
Balmain	18	3	156	2	85	8	1	1	5	...	1	...	9	...
Bexley	3	...	53	1	30	2	...	...	...	...	...	...	5	...
Botany	104	6	68	2	25	...	...	...	...	...	...	...	1	...
Burwood	15	1	73	...	27	2	...	...	1	...	...	...	5	...
Canterbury	28	3	247	1	84	6	2	...	...	...	...	...	13	...
Concord	3	...	19	...	11	...	1	...	...	...	...	...	1	...
Darlington	2	1	20	2	20	3	1	1	1	...	...	...	2	...
Drummoyne	11	1	61	1	20	...	1	...	...	...	...	...	1	...
Eastwood	2	...	6	...	1	...	...	...	...	...	...	...	1	...
Enfield	4	1	27	...	12	...	...	...	...	1	1	...	2	...
Erskineville	6	2	67	...	40	1	1	...	1	...	...	...	2	...
Glebe	29	1	110	1	91	2	2	...	...	...	...	...	7	...
Homebush	1	...	1	...	3	...	...	...	...	...	...	...	1	...
Hunter's Hill	4	...	20	1	6	...	...	...	...	...	1	...	5	...
Hurstville	10	...	86	1	54	2	1	...	...	...	...	...	5	...
Kogarah	8	...	76	1	43	1	1	...	...	...	5	3	2	...
Lane Cove	2	...	40	...	13	...	...	...	...	...	1	...	...	...
Leichhardt	25	3	62	3	52	7	1	...	...	...	1	...	4	...
Manly	17	1	47	...	28	...	...	...	...	...	...	...	3	...
Marrickville	30	2	268	3	109	3	3	...	1	...	1	1	6	...
Mascot	27	2	62	...	51	3	...	...	1	...	...	...	1	...
Mosman	13	...	28	1	18	1	1	...	...	...	...	...	2	...
Newtown	20	6	226	1	90	3	4	1	...	...	1	1	6	...
North Sydney	16	2	164	4	70	2	1	1	6	...	...	...	10	...
Paddington	19	3	104	...	75	1	2	...	18	1	1	...	8	...
Petersham	11	1	129	...	53	1	2	...	...	...	...	...	12	...
Randwick	36	3	154	1	94	3	4	...	6	...	1	1	4	...
Redfern	41	1	206	2	132	5	1	...	...	...	1	...	11	...
Rockdale	17	1	142	...	76	3	...	...	1	...	1	...	4	...
Ryde	...	...	82	...	28	1	3	...	...	...	...	...	2	...
St. Peters	6	2	90	1	42	2	...	...	2	...	...	...	3	...
Strathfield	4	...	12	...	3	...	...	...	...	...	...	...	1	...
Vaucluse	5	...	12	...	...	...	...	...	...	...	...	...	...	...
Waterloo	23	3	130	2	51	3	...	...	...	...	...	...	3	...
Waverley	8	2	113	1	77	3	3	...	3	...	...	...	12	...
Willoughby	10	...	117	1	55	1	...	...	...	...	...	...	6	...
Woollahra	4	1	64	...	57	2	3	...	...	...	...	...	8	...
Kuring-gai Shire	20	1	42	...	31	1	...	...	...	...	...	...	12	...
Auburn	2	...	39	...	32	...	1	...	3	...	1	1	...	...
Bankstown	2	...	18	...	27	1	...	...	...	...	...	...	4	...
Cabramatta & Canley Vale	8	...	9	...	2	...	...	...	...	...	...	...	...	...
Dundas	1	...	7	...	6	...	...	...	...	...	...	...	...	...
Ermington	1	...	2	...	...	...	...	...	...	...	...	...	...	...
Granville	6	...	96	1	26	1	...	...	2	...	1	1	...	...
Lidcombe	1	...	21	...	13	1	...	...	...	...	...	...	31	...
Liverpool	9	8	37	...	26	1	...	...	3	...	6	6	1	...
Parramatta	7	...	96	...	38	2	1	...	...	...	...	...	1	...
Prospect and Sherwood	2	...	57	...	11	...	...	...	...	...	2	...	3	...
Smithfield and Fairfield	...	...	14	...	6	...	1	1	...	...	...	...	...	...
SHIRES.														
Hornsby (Riding B and C)	13	...	125	...	36	...	...	...	...	...	...	...	14	...
Warringah (Ridings B & C)	6	...	12	...	9	...	2	...	...	...	...	...	...	...
Harbour of Port Jackson	6	1	1	...	1	...	...	...	2	...	...	...	...	...
Total	810	83	4,724	48	2,528	101	50	6	88	2	33	20	350	84
Death rate per cent.	10·24		1·01		3·99		12		2·27		66·		24·	

* Only notifiable from 11th October, 1915. † Only notifiable in the Metropolitan District from 11th August, 1915.

TABLE II.—Showing the number of Notified Cases of, and Deaths from, Cerebro-spinal Fever (Meningococcal Meningitis), Diphtheria and Membranous Croup, Infantile Paralysis (Acute Anterior Poliomyelitis), Acute Malarial Fever, Scarlet Fever, Typhoid Fever and Tuberculosis, in the Hunter River District, combined, for the year ended 31st December, 1915.

District.	Typhoid Fever.		Scarlet Fever.		Diphtheria.		Infantile Paralysis.		Acute Malarial Fever.		Cerebro-spinal Fever.*		Tuberculosis.†	
	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.
MUNICIPALITIES.														
Adamstown	...	...	10	...	10	...	...	...	...	...	...	...	...	...
Carrington	1	...	3	...	3	...	...	...	2	...	...	...	...	...
Greta	1	...	1	...	...	...	...	...	...	...	...	...	...	...
Hamilton	7	...	45	...	10	...	...	...	...	...	...	...	...	...
Lambton	4	...	12	...	5	1	...	...	...	...	...	...	...	...
Maitland, East	3	1	10	...	1	...	...	...	...	...	...	...	2	...
Maitland, West	17	...	26	...	18	1	...	...	...	...	...	...	5	...
Merewether	3	...	7	...	15	...	...	...	...	...	...	...	...	...
Morpeth	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Newcastle	8	1	14	...	12	...	...	...	3	...	...	...	...	1
New Lambton	2	...	11	...	5	1	...	...	...	...	...	...	...	...
Raymond Terrace	...	...	5	...	2	...	...	...	...	...	...	...	...	...
Singleton	...	...	24	...	9	...	...	...	...	...	...	...	...	...
Stockton	...	...	15	...	7	...	...	...	...	...	...	...	...	1
Wallsend	20	2	11	...	4	...	...	...	...	...	...	...	...	...
Waratah	11	...	26	...	31	...	...	...	...	...	...	...	...	...
Wickham	3	...	14	...	30	...	...	...	5	...	...	...	...	...
SHIRES.														
Bolwarra	1	...	...	...	2	...	...	...	...	...	...	...	...	...
Cessnock	22	2	67	...	59	2	...	...	...	...	...	...	4	...
Lake Macquarie	7	1	39	...	19	...	...	...	...	...	...	...	...	...
Tarro	2	1	58	...	6	...	...	...	...	...	...	...	...	...
Port Stephens	2	...	6	...	2	...	...	...	...	...	...	...	...	...
Harbour of Port Hunter	...	...	...	...	1	...	...	...	...	...	...	...	...	...
Total	114	8	404	...	251	5	...	...	10	...	...	...	11	2
Death rate per cent.	7·01				1·15								18·18	

TABLE III.—Showing the number of Notified Cases of, and Deaths from, Cerebro-spinal Fever (Meningococcal Meningitis), Diphtheria or Membranous Croup, Infantile Paralysis (Acute Anterior Poliomyelitis), Acute Malarial Fever, Scarlet Fever and Typhoid Fever, in the Remainder of State, for the year ended 31st December, 1915. (Tuberculosis is notifiable at present only in the Metropolitan and Hunter River Combined Districts).

District.	Typhoid Fever.		Scarlet Fever.		Diphtheria.		Infantile Paralysis.		Malaria.		Cerebro-spinal Fever.*	
	C.	D.‡	C.	D.‡	C.	D.‡	C.	D.	C.	D.	C.	D.
MUNICIPALITIES.												
Aberdeen	...	...	1	...	...	...	...	...	...	...	...	...
Albury	23	...	14	...	60	...	...	...	...	...	1	...
Armidale	12	...	62	...	82	...	...	...	...	...	...	...
Ballina	4	...	1	...	1	...	...	...	...	...	...	...
Balranald	2	...	...	...	6	...	...	...	...	...	...	...
Barraba	...	...	6	...	1	...	...	...	...	...	1	1
Bathurst	21	...	126	...	57	...	...	...	...	...	...	...
Bega	1	...	1	...	...	...	...	...	...	...	...	...
Berry	...	...	3	...	4	...	...	...	...	...	...	...
Bingara	...	...	...	...	...	...	...	...	...	...	...	...
Blayney	...	...	7	...	2	...	...	...	...	...	...	...
Bombala	...	...	48	...	4	...	...	...	...	...	...	...
Bourke	8	...	29	...	1	...	...	...	...	...	...	...
Bowral	...	...	17	...	15	...	...	...	...	...	1	1
Braidwood	2	...	2	...	4	...	...	...	...	...	...	...
Brewarrina	2	...	14	...	9	...	...	...	...	...	...	...
Broken Hill	147	...	108	...	489	...	1	1	...	...	...	...
Broughton Vale	...	...	...	...	...	...	...	...	...	...	...	...
Burrowa	3	...	1	...	6	...	...	...	...	...	...	...
Camden	4	...	7	...	6	...	...	...	...	...	...	...
Campbelltown	1	...	2	...	6	...	...	...	...	...	...	...
Carcoar	1	...	6	...	1	...	...	...	...	...	...	...
Casino	17	...	3	...	39	...	...	...	...	...	...	...
Castlereagh	1	...	2	...	...	...	...	...	...	...	...	...
Cobar	10	...	20	...	11	...	...	...	...	...	...	...
Condobolin	8	...	16	...	17	...	...	...	...	...	...	...
Cooma	2	...	24	...	16	...	...	...	...	...	...	...
Coonamble	...	...	8	...	7	...	...	...	...	...	...	...
Cootamundra	15	...	7	...	9	...	...	...	...	...	...	...
Coraki	1	...	...	...	3	...	1	1	...	...	...	...
Corowa	...	...	1	...	10	...	...	...	...	...	...	...
Cowra	8	...	11	...	58	...	...	...	...	...	...	...
Cudal	...	...	...	...	...	...	...	...	...	...	...	...
Cudgegong	...	...	46	...	...	...	...	...	...	...	...	...
Deniliquin	4	...	...	...	5	...	...	...	...	...	...	...
Dubbo	22	...	34	...	65	...	1	1	...	...	...	...
Dungog	...	...	...	...	2	...	...	...	...	...	...	...

* Only notifiable from 11th October, 1915. † Only notifiable from 11th August, 1915.
‡ Statistician' distribution of deaths into districts not yet available.

RETURN showing the number of Cases, &c., from Country Municipalities—*continued.*

District.	Typhoid Fever.		Scarlet Fever.		Diphtheria.		Infantile Paralysis.		Malaria.		Cerebro-spinal Fever. *	
	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.
Forbes	27	...	57	...	10	...	...	...	...	...	...	...
Gerringong	...	...	...	...	...	...	...	...	...	...	...	...
Glen Innes	3	...	2	...	17	...	1	...	...	...	...	...
Goulburn	25	...	78	...	173	...	...	...	...	...	...	...
Grafton	6	...	7	...	3	...	...	...	...	...	...	...
Grafton, South	...	...	5	...	1	...	...	...	...	...	...	...
Grenfell	1	...	14	...	18	...	...	...	...	...	...	...
Gulgong	1	...	2	...	...	...	...	...	...	...	...	...
Gundagai	1	...	9	...	8	...	...	...	...	...	...	...
Gunnedah	10	...	4	...	6	...	...	...	...	...	...	...
Hay	7	...	44	...	2	...	...	...	...	...	...	...
Hillgrove	...	...	1	...	2	...	...	...	...	...	...	...
Hillston	...	...	1	...	...	...	...	...	...	...	...	..
Illawarra, Central	1	...	28	...	4	...	...	...	...	...	...	...
Illawarra, North	...	...	51	...	2	...	...	...	...	...	...	...
Ingleburn	...	...	...	...	1	...	...	...	...	...	...	...
Inverell	16	...	18	...	51	...	...	...	...	...	...	...
Jamberoo	1	...	2	...	2	...	...	...	...	...	...	...
Jerilderie	...	...	...	...	1	...	...	...	...	...	...	...
Junee	11	...	18	...	29	...	1	...	...	...	1	...
Katoomba	1	...	24	...	3	...	...	...	3	...	...	...
Kempsey	...	...	35	...	30	...	...	...	...	...	...	...
Kiama	1	...	22	...	19	...	...	...	...	...	1	...
Lismore	4	...	11	...	12	...	...	...	1	...	...	...
Lithgow	10	...	380	...	17	...	1	1	...	...	...	...
Maclean	3	...	...	...	...	...	...	...	...	...	...	...
Manilla	1	...	6	...	2	...	...	...	...	...	...	...
Mittagong	1	...	3	...	2	...	...	...	...	...	...	...
Moama	...	...	...	...	7	...	...	...	...	...	...	...
Molong	8	...	1	...	10	...	...	...	...	...	...	...
Moss Vale	...	...	2	...	...	...	...	...	...	...	...	...
Moree	7	...	...	...	5	...	...	...	...	...	...	...
Moruya	...	...	...	...	1	...	...	...	...	...	...	...
Mudgee	9	...	192	...	4	...	...	...	...	...	...	...
Mulgoa	...	...	...	...	...	...	...	...	...	...	...	...
Mullumbimby	...	...	...	...	3	...	...	...	...	...	...	...
Murrumburrah	2	...	4	...	17	...	...	...	...	...	...	...
Mururundi	...	...	15	...	1	...	...	...	...	...	...	...
Murwillumbah	2	...	6	...	38	...	...	...	...	...	1	1
Muswellbrook	3	...	30	...	6	...	...	...	1	...	...	...
Narrabri	32	...	10	...	31	...	...	...	...	...	...	...
Narrabri, West	1	...	...	...	13	...	...	...	...	...	...	...
Narrandera	2	...	8	...	14	...	...	...	...	...	1	1
Narromine	2	...	31	...	10	...	...	...	...	...	...	...
Nowra	...	...	...	...	8	...	...	...	...	...	...	...
Nyngan	3	...	10	...	3	...	...	...	...	...	...	...
Orange	23	...	62	...	53	...	...	...	...	...	...	1
Orange, East	...	...	...	...	...	...	...	...	...	...	...	...
Parkes	5	...	17	...	25	...	...	...	...	...	...	...
Peak Hill	3	...	2	...	1	...	...	...	...	...	...	...
Penrith	8	...	27	...	13	...	1	...	...	...	...	...
Picton	1	...	3	...	4	...	...	...	...	...	...	...
Port Macquarie	1	...	...	...	1	...	...	...	...	...	...	...
Queanbeyan	9	...	1	...	14	...	...	...	...	...	...	...
Quirindi	...	...	4	...	9	...	...	...	...	...	...	...
Richmond	3	...	20	...	10	...	...	...	...	...	...	...
Scone	4	...	...	...	3	...	...	...	...	...	...	...
Shellharbour	...	...	10	...	4	...	...	...	...	...	...	...
Shoalhaven, South	...	...	...	...	8	...	...	...	...	...	...	..
St. Mary's	3	...	8	...	4	...	...	...	...	...	...	...
Tamworth	47	...	9	...	17	...	...	...	...	...	...	...
Taree	...	...	...	...	...	...	...	...	...	...	...	...
Temora	8	...	5	...	27	...	...	...	...	...	...	..
Tenterfield	1	...	...	...	7	...	1	...	...	...	...	..
Tumut	1	...	10	...	11	...	1	...	...	...	...	..
Ulladulla	1	...	3	...	4	...	...	...	...	...	...	...
Ulmarra	...	...	1	...	...	...	...	...	...	...	...	...
Uralla	...	...	...	...	1	...	...	...	...	...	...	...
Wagga	5	...	47	...	36	...	...	...	...	...	...	..
Walcha	1	...	12	...	...	...	...	...	...	...	...	..
Walgett	1	...	...	...	10	...	...	...	...	...	...	..
Wallendbeen	...	...	...	...	...	...	...	...	...	...	...	.
Warialda	...	...	...	...	3	...	...	...	...	...	...	...
Warren	1	...	...	...	...	...	...	...	...	...	...	...
Wellington	30	...	49	...	40	...	...	...	...	...	...	...
Wentworth	2	...	...	...	4	...	...	...	...	...	...	.
Wilcannia	...	...	...	...	12	...	...	...	...	...	...	...
Windsor	3	...	9	...	19	...	...	...	...	...	...	...
Wingham	...	...	1	...	2	...	...	...	...	...	...	...
Wollongong	5	...	91	...	7	...	...	...	...	...	1	
Wrightville	...	...	9	...	...	...	...	...	...	...	...	.
Wyalong	1	...	4	...	5	...	...	...	...	...	...	...
Yass	7	...	4	...	15	...	...	...	...	...	...	..
Young	8	...	11	...	8	...	...	...	...	...	...	...
Total	703	...	2,177	...	1,959	...	9	4	5	...	8	6
Death rate per cent.	...		...		...		44		...		75	

* Only notifiable from 11th October, 1915.

RETURN showing the number of Cases, &c., from Shires.

District.	Typhoid Fever.		Scarlet Fever.		Diphtheria.		Infantile Paralysis.		Malaria.		Cerebro-spinal Fever. *	
	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.
SHIRES.												
Abercrombie	2	...	8	...	9	...	...	...	...	...	...	...
Adjungbilly	...	...	9	...	12	...	...	...	...	...	...	...
Amaroo	2	...	2	...	12	...	...	...	...	...	...	...
Apsley	...	...	1	...	...	...	...	...	...	...	...	...
Ashford	...	...	...	...	...	...	...	...	...	...	...	...
Bannockburn	1	...	1	...	9	...	...	...	...	...	...	...
Barraba	...	...	...	...	2	...	...	...	...	...	1	...
Baulkham Hills	2	...	10	...	14	...	...	...	...	...	...	...
Bellingen	7	...	26	...	10	...	...	...	1	...	...	...
Berrigan	...	...	...	...	15	...	...	...	...	...	...	...
Bibbenluke	...	...	124	...	9	...	...	...	...	...	...	...
Blacktown	6	...	35	...	21	...	...	...	...	...	...	...
Bland	3	...	12	...	10	...	...	...	...	...	...	...
Blaxland	4	...	21	...	6	...	...	...	...	...	...	...
Blue Mountains	1	...	19	...	13	...	1	1	...	...	...	...
Bogan	1	...	9	...	2	...	...	...	...	...	...	...
Boolooroo	1	...	...	...	...	...	...	...	...	...	...	...
Boomi	1	...	...	...	...	...	...	...	...	...	...	...
Boree	12	...	38	...	46	...	...	...	...	...	1	1
Bulli	1	...	51	...	4	...	...	...	...	...	...	...
Burrangong	3	...	16	...	7	...	...	...	...	...	...	...
Byron	7	...	7	...	8	...	...	...	...	...	1	1
Cambewarra	...	...	1	...	...	...	...	...	...	...	...	...
Canoblas	5	...	24	...	17	...	...	...	...	...	...	...
Carrathool	2	...	2	...	2	...	...	...	...	...	...	...
Clyde	...	...	2	...	3	...	...	...	...	...	...	...
Cobborah	1	...	7	...	11	...	...	...	...	...	...	...
Cockburn	1	...	...	...	...	...	...	...	...	...	...	...
Collarenebri	...	...	...	...	...	...	...	...	...	...	...	...
Colo	...	...	...	...	5	...	...	...	...	...	...	...
Conargo	...	...	...	...	...	...	...	...	...	...	...	...
Coolah	3	...	1	...	1	...	...	...	...	...	...	...
Coolamon	4	...	2	...	3	...	...	...	...	...	...	...
Coonabarabran	...	...	7	...	3	...	...	...	...	...	...	...
Copmanhurst	...	...	4	...	...	...	...	...	...	...	...	...
Coreen	3	...	...	...	9	...	...	...	...	...	...	...
Crookwell	3	...	5	...	35	...	...	...	...	...	...	...
Culcairn	4	...	1	...	1	...	...	...	...	...	1	1
Dalgety	1	...	15	...	20	...	...	...	...	...	...	...
Demondrille	1	...	5	...	8	...	...	...	...	...	...	...
Dorrigo	6	...	5	...	4	...	...	...	...	...	...	...
Dumaresq	1	...	16	...	11	...	...	...	...	...	...	...
Erina	7	...	29	...	16	...	...	...	...	...	...	...
Eurobodalla	...	...	...	...	2	...	...	...	...	...	...	...
Gadarra	2	...	15	...	6	...	...	...	...	...	...	...
Gilgandra	1	...	24	...	42	...	...	...	...	...	...	...
Gloucester	1	...	...	...	4	...	...	...	...	...	...	...
Gobang	21	...	16	...	34	...	...	...	...	...	...	...
Goodradigbee	7	...	7	...	17	...	...	...	...	...	...	...
Gostwyck	...	...	12	...	2	...	...	...	...	...	...	...
Gundurimba	...	...	...	...	1	...	...	...	...	...	...	...
Gunning	20	...	4	...	43	...	...	...	...	...	...	...
Guyra	1	...	15	...	41	...	...	...	...	...	...	...
Gwydir	...	...	...	...	...	...	...	...	...	...	...	...
Harwood	...	...	2	...	1	...	...	...	...	...	...	...
Hastings	4	...	3	...	5	...	...	...	...	...	...	...
Holbrook	2	...	...	...	7	...	...	...	...	...	...	...
Hornsby (Riding A)	1	...	3	...	2	...	...	...	...	...	1	1
Hume	...	...	1	...	10	...	...	...	...	...	...	...
Illabo	...	...	12	...	8	...	...	...	...	...	...	...
Imlay	...	...	15	...	...	...	...	...	...	...	...	...
Jemalong	2	...	9	...	12	...	...	...	...	...	...	...
Jindalee	...	...	4	...	...	...	...	...	...	...	...	...
Kyeamba	1	...	8	...	3	...	...	...	...	...	...	...
Kyogle	11	...	1	...	1	...	...	...	...	...	...	...
Lachlan	3	...	14	...	3	...	...	...	...	...	...	...
Liverpool Plains	3	...	9	...	3	...	...	...	...	...	...	...
Lockhart	...	...	4	...	13	...	...	...	...	...	...	..
Lyndhurst	2	...	26	...	14	...	...	...	...	...	...	..
McIntyre	6	...	...	...	6	...	...	...	...	...	...	...
Macleay	2	...	8	...	8	...	...	...	...	...	...	...
Macquarie	...	...	1	...	9	...	...	...	...	...	...	...
Mandowa	...	...	3	...	5	...	...	...	...	...	...	...
Manning	1	...	4	...	15	...	...	...	...	...	...	...
Marthaguy	1	...	2	...	2	...	...	...	...	...	...	...
Meroo	...	...	16	...	...	...	...	...	...	...	...	...
Merriwa	1	...	2	...	6	...	...	...	...	...	...	...
Mitchell	1	...	9	...	10	...	...	...	...	...	...	...
Monaro	...	...	3	...	2	...	...	...	...	...	...	...
Mulwaree	4	...	15	...	28	...	2	...	...	...	...	...
Mumbulla	1	...	1	...	6	...	...	...	...	...	...	...
Murrungal	...	...	1	...	4	...	...	...	...	...	...	...

* Only notifiable from 11th October, 1915.

RETURN showing the number of Cases, &c., from Shires—*continued.*

District.	Typhoid Fever.		Scarlet Fever.		Diphtheria.		Infantile Paralysis.		Malaria.		Cerebro-spinal Fever.*	
	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.
Murray	...	...	...	...	5	...	...	...	...	...	...	...
Murrumbidgee	...	...	...	...	4	...	...	...	...	...	...	...
Muswellbrook	1	...	15	...	1	...	...	...	...	...	...	...
Namoi	4	...	27	...	12	...	...	...	...	...	...	...
Narraburra	1	...	2	...	12	...	...	...	...	...	...	...
Nattai	1	...	9	...	1	...	...	...	...	...	...	...
Nepean	...	...	1	...	...	...	...	...	...	...	...	...
Nundle	6	...	...	...	4	...	...	...	...	...	...	...
Nymboida	...	...	6	...	1	...	...	...	...	...	...	...
Oberon	...	...	3	...	...	...	...	...	...	...	...	...
Orara	...	...	5	...	2	...	...	...	...	...	...	...
Patrick's Plain	6	...	14	...	1	...	...	...	...	...	...	...
Peel	5	...	6	...	...	...	...	...	...	...	...	...
Rylstone	...	...	16	...	4	...	...	...	...	...	...	...
Severn	...	...	5	...	21	...	...	...	...	...	...	...
Stroud	...	...	1	...	2	...	...	...	...	...	...	...
Sutherland	1	...	6	...	11	...	...	...	...	...	1	1
Talbragar	5	...	4	...	17	...	...	...	...	...	...	...
Tallaganda	1	...	4	...	12	...	...	...	...	...	...	...
Tamarang	...	...	3	...	2	...	...	...	...	...	...	...
Tenterfield	...	...	...	...	...	...	...	...	...	...	...	...
Terania	...	...	1	...	...	...	...	...	...	...	...	...
Timbriebongie	7	...	12	...	5	...	...	...	...	...	...	...
Tintenbar	1	...	1	...	3	...	...	...	...	...	...	...
Tomki	1	...	...	...	1	...	...	...	...	...	...	...
Tumbarumba	13	...	3	...	15	...	...	...	...	...	...	...
Turon	4	...	9	...	6	...	...	...	...	...	...	...
Tweed	2	...	9	...	12	...	...	...	...	...	...	...
Urana	...	...	...	...	...	...	...	...	...	...	2	2
Wakool	4	...	...	...	...	...	...	...	...	...	...	...
Walgett	5	...	10	...	18	...	1	...	...	...	...	...
Wallarobba	1	...	...	...	2	...	...	...	...	...	...	...
Waradgery	4	...	1	...	...	...	...	...	...	...	...	...
Warrah	2	...	3	...	6	...	...	...	...	...	...	...
Warringah	...	...	...	...	...	...	...	...	...	...	...	...
Waugoola	4	...	20	...	19	...	...	...	...	...	...	...
Weddin	5	...	16	...	36	...	...	...	...	...	...	...
Winduran	...	...	1	...	1	...	...	...	...	...	...	...
Wingadee	...	...	7	...	1	...	...	...	...	...	...	...
Wingecarribee	2	...	2	...	5	...	...	...	...	...	...	...
Wollondilly	1	...	4	...	2	...	...	...	1	...	...	...
Woodburn	...	...	...	...	1	...	...	...	...	...	...	...
Woolooma	...	...	5	...	7	...	...	...	...	...	...	...
Wunnumurra	...	...	...	...	...	...	...	...	...	...	...	...
Wyaldra	...	...	3	...	1	...	...	...	...	...	...	...
Yallaroi	2	...	...	...	...	...	...	...	...	...	...	...
Yanko	2	...	11	...	17	...	...	...	...	...	1	1
Yarrolumla	...	...	...	...	4	...	...	...	...	...	...	...
Total	286	...	1,029	...	1,007	...	4	1	2	...	9	7
Death rate per cent.	.....		.....		.....		·25		.....		·77	

POLICE DISTRICTS.

Balranald	1	...	...	...	...	...	...	...	...	...	...	...
Bourke	...	...	...	...	2	...	...	...	...	...	...	...
Brewarrina	...	...	1	...	10	...	...	...	...	...	...	...
Broken Hill	...	...	...	...	2	...	...	...	...	...	...	...
Cobar	3	...	...	...	40	...	...	...	...	...	...	...
Hay	...	...	...	...	...	...	...	...	...	...	...	...
Hillston	...	...	...	...	...	...	...	...	...	...	...	...
Menindie	...	...	...	...	...	...	...	...	...	...	...	...
Mitchell	20	...	...	...	18	...	...	...	...	...	...	...
Walgett	...	...	...	...	2	...	...	...	...	...	...	...
Wentworth	...	...	...	...	...	...	...	...	...	...	...	...
Total	24	...	1	...	74	...	...	...	...	...	...	...
Death rate per cent.	.....		.....		.....		.....		.....		.....	
Outside the State.												
Queensland	1	...	...	...	...	...	...	...	...	...	...	...
Victoria	3	...	...	...	19	...	...	...	...	...	...	...
Total	4	1	...	...	19	...	...	...	...	...	...	...
Death rate per cent	.....		.....		.....		.....		.....		.....	

SUMMARY showing number of cases notified and death rate per cent. in each division of New South Wales.

District.	Typhoid Fever.		Scarlet Fever.		Diphtheria.		Infantile Paralysis.		Malaria.		Cerebro-spinal Meningitis.*		Tuberculosis.	
	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.
Metropolitan Combined Sanitary District	810	83	4,724	48	2,528	101	50	6	88	2	33	20	350	84
Hunter River Combined Sanitary District	114	8	404	...	251	5	...	...	10	...	...	...	11	2
Remainder of State :—														
Municipalities	703	} 128†	2,177	} 49†	1,959	} 158†	9	} 5†	5	...	8	6	...	...
Shires	286		1,029		1,007		4		2	...	9	7	...	...
Police Districts, &c.	28		1		93		...		...	...	...	...	...	...
Total	1,941	219	8,335	97	5,838	264	63	11	105	2	50	33	361	86
Death rate per cent.	11·28		1·16		4·52		17·46		1·9		66·00		23·82	

* Only notifiable from 11th October, 1915. † Statistician's distribution of deaths into districts not yet available.

TABLE IV.—Table showing Age and Sex, incidence, and mortality in the Metropolitan Combined District, Hunter River Combined District, and Remainder of State, from the notified cases of Cerebro-spinal Fever (Meningococcal Meningitis), Diphtheria and Membranous Croup, Infantile Paralysis (Acute Anterior Poliomyelitis), Acute Malarial Fever, Scarlet Fever, Typhoid Fever, and Tuberculosis for the year ended 31st December, 1915.

METROPOLITAN COMBINED DISTRICT.

Age Period.	Typhoid Fever.						Scarlet Fever.						Diphtheria.						Infantile Paralysis.						*Cerebro-spinal Meningitis.						†Tuberculosis.						Malaria.					
	Incidence.			Mortality.			Incidence.			Mortality.			Incidence.			Mortality.			Incidence.			Mortality.			Incidence.			Mortality.			Incidence.			Mortality.			Incidence.			Mortality.		
	Notified cases.			Notified deaths.			Notified cases.			Notified deaths.			Notified cases.			Notified deaths.			Notified cases.			Notified deaths.			Notified cases.			Notified deaths.			Notified cases.			Notified deaths.			Notified cases.			Notified deaths.		
	M.	F.	Total	M.	F.	Total	M.	F.	Total	M.	F.	Total	M.	F.	Total	M.	F.	Total	M.	F.	Total	M.	F.	Total	M.	F.	Total	M.	F.	Total	M.	F.	Total	M.	F.	Total	M.	F.	Total	M.	F.	Total
All ages	455	355	810	51	32	83	1,770	2,954	4,724	20	28	48	1,119	1,409	2,528	49	52	101	33	17	50	3	3	6	21	12	33	13	7	20	215	135	350	43	41	84	86	2	88	1	1	2
months	...	...	...	...	...	...	9	9	18	1	1	2	23	9	32	11	5	16	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
year	...	...	...	...	...	...	58	56	114	4	1	5	112	62	174	15	13	28	13	8	21	2	2	4	1	1	2	1	1	2	...	...	...	...	...	...	...	...	...	...	...	...
2 years	1	2	3	...	...	...	102	110	212	2	6	8	119	115	234	6	10	16	8	4	12	1	...	1	4	3	7	2	1	3	...	...	...	...	...	...	...	...	...	...	...	...
3 ,,	5	6	11	...	...	...	145	164	309	2	2	4	128	107	235	7	7	14	4	...	4	...	...	...	1	1	2	1	1	2	...	...	...	...	...	...	...	...	...	...	...	...
4 ,,	4	12	16	...	1	1	155	181	336	3	1	4	117	112	229	5	4	9	2	3	5	...	...	...	1	1	2	1	1	2	...	...	...	...	...	...	...	...	...	...	...	...
5 ,,	15	7	22	...	...	...	153	252	405	5	7	12	92	105	197	3	10	13	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total, 5 years	25	27	52	...	1	1	622	772	1,394	17	18	35	591	510	1,101	47	49	96	27	15	42	3	2	5	7	7	14	5	4	9	...	...	...	...	...	...	...	...	...	...	...	...
10 years	61	40	101	2	4	6	611	1,153	1,764	1	2	3	246	371	617	...	...	...	5	1	6	...	...	...	2	...	2	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...
15 ,,	44	52	96	7	2	9	300	525	825	...	...	...	105	180	285	...	...	...	1	...	1	...	1	1	1	1	2	...	...	...	1	2	3	...	...	...	...	...	...	...	...	...
20 ,,	55	55	110	11	4	15	78	173	251	...	...	...	40	85	125	...	...	...	...	1	1	...	...	...	1	...	1	...	...	...	7	9	16	7	7	14	11	...	11	1	...	1
25 ,,	66	65	131	7	5	12	64	118	182	1	2	3	50	87	137	...	1	1	...	...	...	...	...	...	5	1	6	5	1	6	26	19	45	9	9	18	26	...	26	...	...	...
35 ,,	113	64	177	12	8	20	67	149	216	1	5	6	50	112	162	1	1	2	...	...	...	...	...	...	1	2	3	1	2	3	59	49	108	20	18	38	38	1	39	...	...	...
45 ,,	56	20	76	5	4	9	8	28	36	...	1	1	14	25	39	...	...	...	...	...	...	...	...	...	2	1	3	...	...	...	44	28	72	6	6	12	6	...	6	...	1	1
55 ,,	25	21	46	5	3	8	3	7	10	...	...	...	3	13	16	1	1	2	...	...	...	...	...	...	2	...	2	2	...	2	48	14	62	1	1	2	1	1	2	...	...	...
Over 55 ,,	7	5	12	2	1	3	2	2	4	...	...	...	1	2	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	25	8	33	...	...	...	4	...	4	...	...	...
Age not stated	3	6	9	...	...	...	15	27	42	...	...	...	19	24	43	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	6	10	...	...	...	...	...	...	...	...	...

* Only notifiable from 11th October 1915. † Not notifiable in "Remainder of State."

TABLE IV.—Table showing Age and Sex, Incidence and Mortality, &c.—*continued.*

HUNTER RIVER COMBINED DISTRICT.

Age Period.	Typhoid Fever.						Scarlet Fever.						Diphtheria.					
	Incidence.			Mortality.			Incidence.			Mortality.			Incidence.			Mortality.		
	Notified cases.			Notified deaths.			Notified cases.			Notified deaths.			Notified cases.			Notified deaths.		
	M.	F.	Total	M.	F.	Total	M.	F.	Total	M.	F.	Total	M.	F.	Total	M.	F.	Total
All ages.....	73	41	114	5	3	8	136	268	404	...	...	...	98	153	251	3	2	5
6 months	...	...	...	...	...	...	1	4	5	...	...	...	...	...	...	...	...	...
1 year ...	...	...	...	...	...	...	2	14	16	...	...	...	8	10	18	1	...	1
2 years ...	1	1	2	...	...	...	13	19	32	...	...	...	8	16	24	1	...	1
3 ,, ...	...	...	...	...	...	...	8	20	28	...	...	...	15	23	38	1	2	3
4 ,, ...	1	2	3	...	...	...	11	15	26	...	...	...	14	11	25	...	...	...
5 ,, ...	3	2	5	2	1	3	8	23	31	...	...	...	8	13	21	...	...	...
Total 5 years ...	5	5	10	2	1	3	43	95	138	...	...	...	53	73	126	3	2	5
10 ,, ...	11	4	15	...	...	...	42	92	134	...	...	...	22	32	54	...	...	...
15 ,, ...	12	7	19	...	...	...	25	41	66	...	...	...	7	22	29	...	...	...
20 ,, ...	9	9	18	...	...	...	6	11	17	...	...	...	5	3	8	...	...	...
25 ,, ...	3	7	10	...	2	2	8	9	17	...	...	...	4	8	12	...	...	...
35 ,, ...	24	6	30	3	...	3	8	11	19	...	...	...	6	8	14	...	...	...
45 ,, ...	3	3	6	...	...	...	3	1	4	...	...	...	1	3	4	...	...	...
55 ,, ...	4	...	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Over 55 ,, ...	1	...	1	...	...	...	...	2	2	...	...	...	...	...	...	...	...	...
Age not stated...	...	1	1	...	...	...	1	6	7	...	...	...	...	4	4	...	...	...

Age Period.	Infantile Paralysis.[1]				Malaria.				*Cerebro-spinal Meningitis.				Tuberculosis.			
	Incidence.			Mortality.	Incidence.			Mortality.	Incidence.			Mortality.	Incidence.			Mortality.
	Notified cases.			Notified deaths.	Notified cases.			Notified deaths.	Notified cases.			Notified deaths.	Notified cases.			Notified deaths.
	M.	F.	Total	M. F. Total	M.	F.	Total	M. F. Total	M.	F.	Total	M. F. Total	M.	F.	Total	M. F. Total
All ages.....	...	...	...	... ...	10	...	10	... ...	...	...	...	... ...	5	6	11	... 2 2
6 months	...	...	...	... ...	...	...	...	... ...	...	...	...	... ...	...	...	...	... ...
1 year ...	...	...	...	... ...	...	...	...	... ...	...	...	...	... ...	...	...	...	... ...
2 years ...	...	...	...	... ...	...	...	...	... ...	...	...	...	... ...	...	...	...	... ...
3 ,, ...	...	...	...	... ...	...	...	...	... ...	...	...	...	... ...	...	...	...	... ...
4 ,, ...	...	...	...	... ...	...	...	...	... ...	...	...	...	... ...	...	...	...	... ...
5 ,, ...	...	...	...	... ...	...	...	...	... ...	...	...	...	... ...	...	...	...	... ...
Total 5 years ...	...	...	...	... ...	...	...	...	... ...	...	...	...	... ...	...	...	...	... ...
10 ,, ...	...	...	...	... ...	...	...	...	... ...	...	...	...	... ...	...	...	...	... ...
15 ,, ...	...	...	...	... ...	...	...	...	... ...	...	...	...	... ...	...	...	...	... ...
20 ,, ...	...	...	...	... ...	10	...	10	... ...	...	...	...	... ...	...	2	2	... 1 1
25 ,, ...	...	...	...	... ...	...	...	...	... ...	...	...	...	... ...	3	3	6	... 1 1
35 ,, ...	...	...	...	... ...	...	...	...	... ...	...	...	...	... ...	2	1	3	... ...
45 ,, ...	...	...	...	... ...	...	...	...	... ...	...	...	...	... ...	...	...	...	... ...
55 ,, ...	...	...	...	... ...	...	...	...	... ...	...	...	...	... ...	...	...	...	... ...
Over 55 ,, ...	...	...	...	... ...	...	...	...	... ...	...	...	...	... ...	...	...	...	... ...
Age not stated...	...	...	...	... ...	...	...	...	... ...	...	...	...	... ...	...	...	...	... ...

REMAINDER OF STATE.

Age Period.	Typhoid Fever.						Scarlet Fever.						Diphtheria.					
	Incidence.			Mortality.			Incidence.			Mortality.			Incidence.			Mortality.		
	Notified cases.			Notified deaths.			Notified cases.			Notified deaths.			Notified cases.			Notified deaths.		
	M.	F.	Total	M.	F.	Total	M.	F.	Total	M.	F.	Total	M.	F.	Total	M.	F.	Total
All ages.....	622	395	1,017	85	43	123	1,272	1,935	3,207	20	29	49	1,227	1,832	3,059	79	79	158
6 months ...	1	...	1	...	...	...	9	7	16	1	...	1	1	5	6	4	1	5
1 year	...	3	3	...	...	...	72	50	122	3	2	5	60	51	111	11	10	21
2 years	7	5	12	...	...	...	74	80	154	2	1	3	69	78	147	12	12	24
3 ,, ...	11	5	16	...	...	...	106	87	193	3	2	5	94	91	185	7	8	15
4 ,, ...	12	13	25	...	...	...	99	141	240	1	5	6	104	106	210	8	11	19
5 ,, ...	11	21	32	...	...	...	99	130	229	6	6	12	128	126	254	31	28	59
Total 5 years	42	47	89	...	...	...	459	495	954	16	16	32	456	457	913	73	70	143
10 ,, ...	81	71	152	3	10	13	431	760	1,191	1	5	6	346	481	827	3	7	10
15 ,, ...	72	42	114	6	11	17	190	360	550	1	2	3	138	284	422	1	2	3
20 ,, ...	78	58	136	15	9	24	89	121	210	1	3	4	99	193	292	...	...	...
25 ,, ...	80	63	143	20	6	26	40	68	108	...	...	...	53	149	202	...	...	...
35 ,, ...	133	62	195	14	2	16	35	67	102	1	1	2	73	165	238	...	...	...
45 ,, ...	72	28	100	14	2	16	14	37	31	...	2	2	30	52	82	1	...	1
55 ,, ...	33	12	45	7	2	9	3	7	10	...	...	...	13	24	37	1	...	1
Over 55 ,, ...	17	5	22	6	1	7	...	1	1	...	...	...	2	11	13	...	...	...
Age not stated ...	14	7	21	...	...	...	11	19	30	...	...	...	17	16	33	...	...	...

Age Period.	Infantile Paralysis.[1]				Malaria.				*Cerebro-spinal Meningitis.				Tuberculosis.			
	Incidence.			Mortality.	Incidence.			Mortality.	Incidence.			Mortality.	Incidence.			Mortality.
	Notified cases.			Notified deaths.	Notified cases.			Notified deaths.	Notified cases.			Notified deaths.	Notified cases.			Notified deaths.
	M.	F.	Total	M. F. Total	M.	F.	Total	M. F. Total	M.	F.	Total	M. F. Total	M.	F.	Total	M. F. Total
All ages.....	5	5	10	... ...	7	3	10	... ...	...	...	...	... ...	10	7	17	8 5 13
6 months ...	...	...	...	... ...	...	...	...	... ...	...	...	...	... ...	...	...	...	... ...
1 year	...	...	...	... ...	...	...	...	... ...	...	...	...	... ...	2	1	3	2 1 3
2 years	...	...	...	... ...	...	...	...	... ...	...	...	...	... ...	...	...	...	... ...
3 ,, ...	...	...	...	... ...	...	...	...	... ...	...	...	...	... ...	1	1	2	1 1 2
4 ,, ...	...	...	...	... ...	...	...	...	... ...	...	...	...	... ...	1	1	...	... ...
5 ,, ...	...	...	...	... ...	...	...	...	... ...	...	...	...	... ...	1	1	...	1 1
Total 5 years	...	...	...	... ...	...	...	...	... ...	...	...	...	... ...	3	4	7	3 3 6
10 ,, ...	...	...	...	... ...	...	...	...	... ...	...	...	...	... ...	1	...	1	1 ... 1
15 ,, ...	...	...	...	... ...	...	...	...	... ...	...	...	...	... ...	...	1	1	... 1 1
20 ,, ...	...	...	...	... ...	...	...	...	... ...	...	...	...	... ...	2	2	4	2 1 3
25 ,, ...	...	...	...	... ...	...	...	...	... ...	...	...	...	... ...	2	...	2	1 ... 1
35 ,, ...	...	...	...	... ...	3	1	4	... ...	...	...	...	... ...	2	...	2	1 ... 1
45 ,, ...	...	...	...	... ...	1	...	1	... ...	...	...	...	... ...	...	...	...	... ...
55 ,, ...	...	...	...	... ...	...	1	1	... ...	...	...	...	... ...	...	...	...	... ...
Over 55 ,, ...	...	...	...	... ...	1	...	1	... ...	...	...	...	... ...	...	...	...	... ...
Age not stated ...	...	...	...	... ...	...	...	...	... ...	...	...	...	... ...	...	...	...	... ...

* Only notifiable from 11th October, 1915.

TABLE V.—Showing the seasonal prevalence of Cerebro-spinal Fever (Meningococcal Meningitis), Diphtheria and Membranous Croup, Infantile Paralysis (Acute Anterior Poliomyelitis), Acute Malarial Fever, Scarlet Fever, Typhoid Fever, and Tuberculosis in New South Wales for the year ended 31st December, 1915.

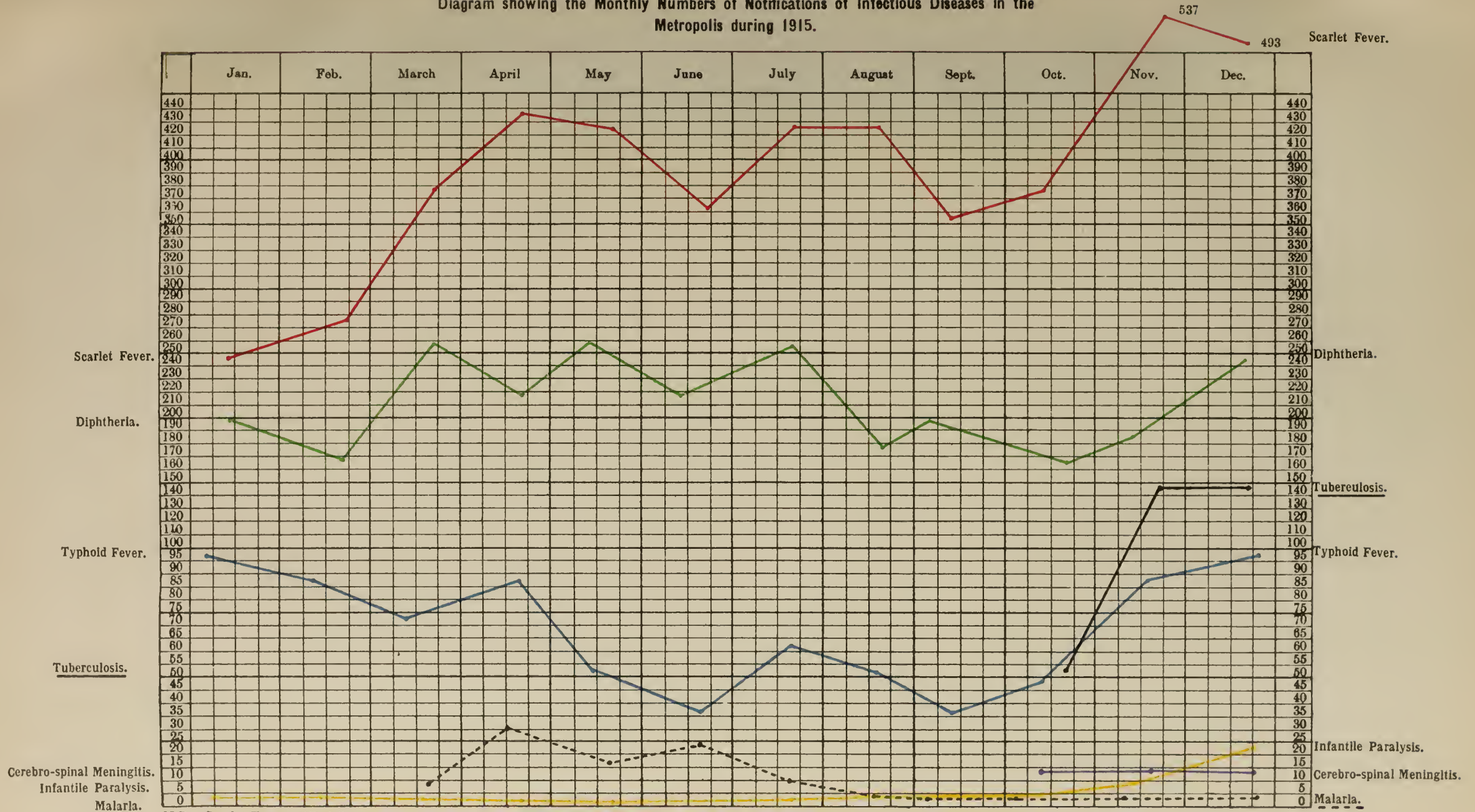
Month, 1915.	Typhoid Fever.								Scarlet Fever.								Diphtheria.							
	Metropolitan Combined Districts.		Hunter River Combined Districts.		Remainder of State.		Total.		Metropolitan Combined Districts.		Hunter River Combined Districts.		Remainder of State.		Total.		Metropolitan Combined Districts.		Hunter River Combined Districts.		Remainder of State.		Total.	
	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.
January	95	8	18	...	81	...	194	...	249	...	11	...	85	...	345	...	194	6	8	...	160	...	362	...
February	87	8	16	3	146	...	249	...	279	3	28	...	129	...	436	...	165	5	22	...	267	...	454	...
March	73	11	20	...	231	...	324	...	377	...	60	...	180	...	617	...	257	13	34	...	448	...	739	...
April	87	3	16	...	116	...	219	...	437	2	64	...	238	...	739	...	219	7	19	...	338	...	576	...
May	53	3	3	...	92	...	148	...	425	2	35	...	275	...	735	...	259	6	22	...	306	...	587	...
June	38	10	5	1	72	...	115	...	351	3	33	...	294	...	678	...	216	11	24	...	296	...	536	...
July	60	10	5	1	40	...	105	...	425	6	18	...	244	...	687	...	255	13	16	...	236	...	507	...
August	50	7	7	1	40	...	97	...	425	5	26	...	316	...	767	...	171	6	36	...	240	...	447	...
September	39	6	3	...	35	...	77	...	348	7	11	...	265	...	624	...	198	10	14	...	128	...	340	...
October	48	5	2	...	20	...	70	...	378	6	15	...	240	...	633	...	165	4	20	...	136	...	321	...
November	87	8	7	...	41	...	135	...	537	7	59	...	436	...	1,032	...	183	13	11	...	182	...	376	...
December	93	4	12	2	103	...	208	...	493	7	44	...	505	...	1,042	...	246	7	25	...	322	...	593	...
Totals	810	83	114	8	1,017	128	1,941	219	4,724	48	404	...	3,207	49	8,335	97	2,528	101	251	5	3,059	158	5,838	264
Death-rate per cent.	10·24		7·01		12·58		11·28		1·01		Nil.		1·55		1·16		3·99		1·99		5·19		4·52	

Month, 1915.	Infantile Paralysis.								Malaria.								* Cerebro-spinal Meningitis.								† Tuberculosis.							
	Metropolitan Combined Districts.		Hunter River Combined Districts.		Remainder of State.		Total.		Metropolitan Combined Districts.		Hunter River Combined Districts.		Remainder of State.		Total.		Metropolitan Combined Districts.		Hunter River Combined Districts.		Remainder of State.		Total.		Metropolitan Combined Districts.		Hunter River Combined Districts.		Remainder of State.†		Total.	
	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.
January	2	...	...	...	1	...	3	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
February	2	...	...	...	4	2	6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
March	2	...	...	...	1	...	3	...	9	...	...	...	...	...	9	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
April	1	...	...	...	2	1	3	...	30	...	2	...	4	...	36	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
May	1	...	...	...	1	...	2	...	11	...	8	...	...	...	19	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
June	...	...	...	...	...	...	...	...	17	...	...	...	...	...	17	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
July	1	...	...	...	...	...	1	...	9	...	...	...	1	...	10	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
August	3	1	...	...	...	...	3	...	...	...	...	...	2	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
September	1	...	...	...	2	1	3	...	3	...	...	...	...	...	3	...	...	...	...	...	...	...	...	...	...	...	3	...	...	...	3	...
October	5	1	...	...	...	...	5	...	3	...	...	...	...	...	3	...	10	5	...	...	5	4	15	...	52	10	5	...	...	...	57	10
November	8	2	...	...	1	1	9	...	3	...	...	...	...	...	3	...	12	8	...	...	6	5	18	1	149	22	3	2	...	...	152	24
December	24	2	...	...	1	...	25	...	3	1	...	...	...	...	3	1	11	7	...	...	6	4	17	1	149	52	...	...	...	...	149	52
Totals	50	6	...	...	13	5	63	11	88	2	10	...	7	...	105	2	33	20	...	...	17	13	50	33	350	84	11	2	...	...	361	86
Death-rate per cent.	12·		Nil.		38·46		17·46		2·27		Nil.		Nil.		1·9		66·		Nil.		76·47		66·		24·		18·18		Nil.		23·82	

* Only notifiable from 11th October, 1915.

† Tuberculosis is at present only notifiable in the Metropolitan and Hunter River combined districts.

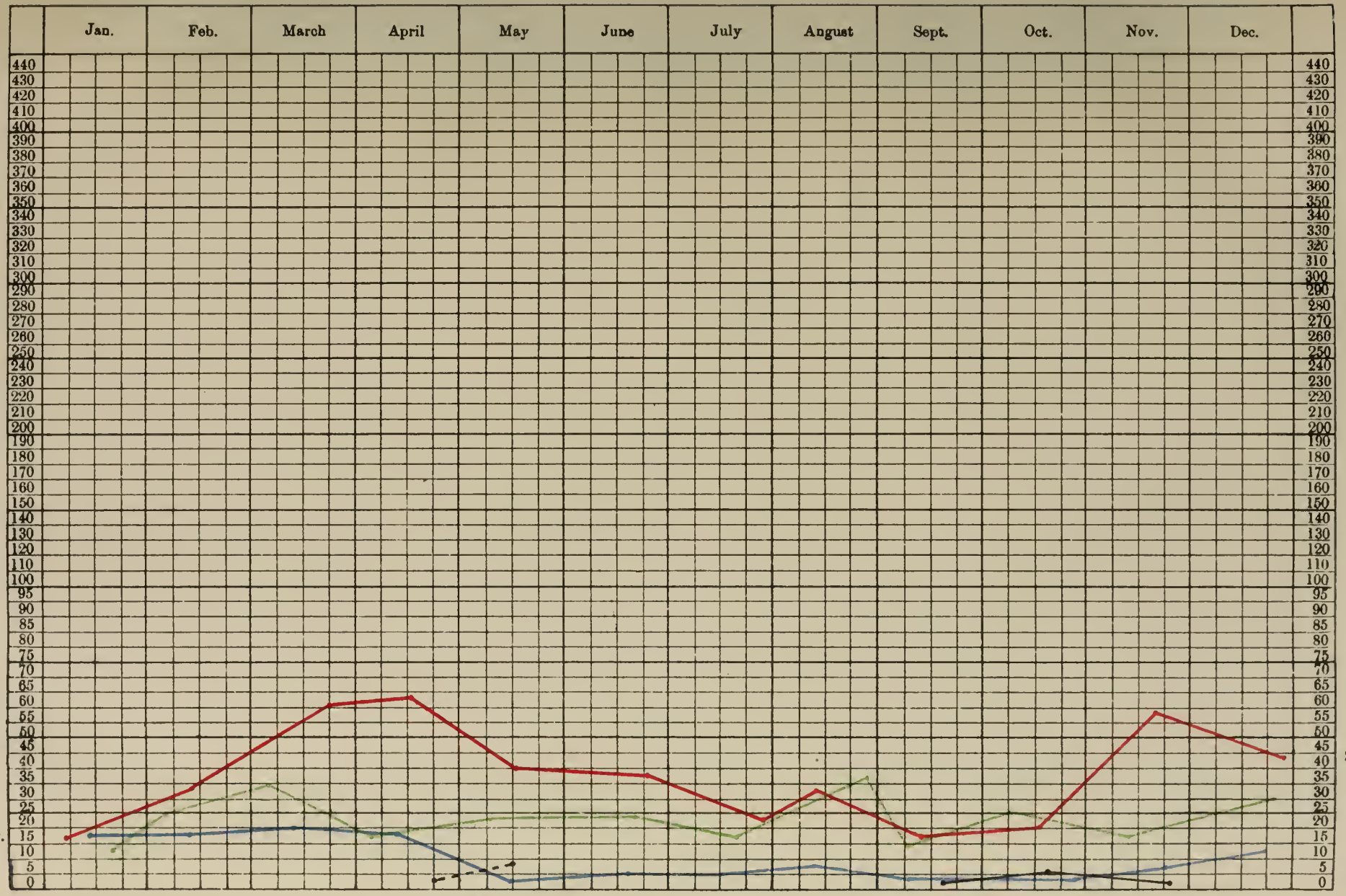
Diagram showing the Monthly Numbers of Notifications of Infectious Diseases in the Metropolis during 1915.



N.B.—Scarlet Fever—"Red."
Diphtheria—"Green."
Typhoid Fever—"Blue."
Tuberculosis—"Black."
Cerebro-spinal Meningitis—"Purple."
Malaria—"Black dotted."
Infantile Paralysis—"Yellow."

LIBRARY
OF THE
UNIVERSITY OF ILLINOIS

Diagram showing the Monthly Numbers of Notifications of Infectious Diseases in the Hunter River Combined District during 1915.



N.B.—Scarlet Fever—"Red."
Diphtheria—"Green."
Typhoid Fever—"Blue."
Tuberculosis—"Black."
Malaria—"Black dotted."

LIBRARY
OF THE
UNIVERSITY OF ILLINOIS

Diagram showing the Monthly Numbers of Notifications of Infectious Diseases in the Remainder of State during 1915.

N.B.—Scarlet Fever—"Red."
Diphtheria—"Green."
Typhoid Fever—"Blue."
Cerebro-spinal Meningitis—"Purple."
Malaria—"Black dotted."
Infantile Paralysis—"Yellow."

OF THE
UNIVERSITY OF

TABLE VI.—Showing the number of Cases of Infectious Diseases notified in the State of New South Wales during the years 1898 to 1915, and the number of deaths therefrom.

Year.	Population.	Typhoid Fever.		Scarlet. Fever.		Diphtheria.		Plague.*		Infantile Paralysis.†		Malaria.‡		Cerebro-spinal Meningitis.§		Tuberculosis.¶		
		Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	
1898	1,323,130	3,302	387	6,342	83	1,493	169	...	...	...	...	...	...	...	...	...	...	
1899	1,344,080	2,783	347	1,389	25	741	60	...	...	...	...	...	...	...	...	...	...	
1900	1,364,590	3,442	398	895	9	726	63	303	103	...	...	...	...	...	...	...	...	
1901	1,376,199	2,702	291	1,288	16	922	131	...	...	...	...	...	...	...	...	...	...	
1902	1,397,858	2,624	276	2,010	61	757	74	140	41	...	...	...	...	...	...	...	...	
1903	1,416,879	4,855	475	5,358	87	1,214	134	2	...	...	...	...	...	...	...	...	...	
1904	1,440,919	2,370	249	4,056	50	1,584	156	12	6	...	...	...	...	...	...	146	...	City of Sydney only.
1905	1,469,153	2,226	239	1,773	21	1,118	102	56	21	...	...	...	...	...	...	128	...	
1906	1,498,609	2,373	271	3,085	42	1,219	100	20	8	...	...	...	...	...	...	118	...	
1907	1,531,980	1,972	189	2,570	26	1,376	133	51	20	...	...	...	...	...	...	161	...	
1908	1,560,026	2,607	307	2,755	40	2,001	123	...	...	...	...	...	...	...	...	112	...	
1909	1,596,685	2,615	287	2,178	30	2,419	166	...	...	...	...	...	...	...	...	196	...	
1910	1,638,220	2,714	294	1,642	23	4,989	207	...	...	...	...	...	...	...	...	184	...	
1911	1,698,735	1,864	184	2,618	11	4,784	226	...	...	...	...	...	...	...	...	222	...	
1912	1,778,962	2,126	236	662	11	5,440	253	...	...	...	...	...	...	...	...	265	...	
1913	1,832,456	2,187	236	1,120	23	6,380	310	...	...	47	10	...	...	...	...	228	...	
1914	1,862,028	2,284	250	3,207	21	5,831	247	...	...	79	14	...	...	...	...	293	...	
1915	1,868,644	1,941	219	8,335	97	5,838	264	...	...	63	11	105	2	50	33	361	86	

* Notifiable from 23rd January, 1900.
† „ 1st February, 1912.
‡ „ 17th March, 1915.
§ „ 11th October, 1915.
¶ „ 18th October, 1904, in the city of Sydney only; and from 11th August, 1915, in the Metropolitan and Hunter River Districts, but not elsewhere in the State at present.

Diagrams are appended showing the monthly incidence of the diseases above mentioned.

HOSPITAL ADMISSION DEPÔT.

Medical Staff:

Dr. Arthur A. Palmer, First Government Officer for Sydney.

Dr. A. C. Cahill, Second Government Officer for Sydney.

Among the varied calls made upon Dr. Cahill and myself, the following branches of work may be specially referred to:—

Hospital Admission Depot.—The Government Medical Officers attended each morning from 9 to 12·30 to carry out examinations of indigent sick persons who were seeking admission to the various hospitals and institutions, and when necessary the destitute sick were visited in their own homes before being transferred to a hospital. Some idea of the volume and scope of the work may be gathered from the following figures: The number of persons applying at this depôt for admission to the hospitals and asylums showed an increase of 391 over the applicants in 1914, 13,152 presenting themselves for examination as against 12,761 in the previous year. The ages of applicants ranged from one month to over 60 years, and there were representatives of every nationality. 3,529 persons were sent to the Departmental General Hospital, the Coast Hospital at Little Bay, 394 to the Royal Prince Alfred Hospital, 247 to the Sydney Hospital, 163 to the Women's Hospital, 94 to the Hospice for the Dying, and 6,595 were admitted to one or other of the State hospitals and asylums.

The number of persons applying for orders for treatment as outdoor patients showed a decrease on the previous year, 1,457 orders being issued as compared with 2,069 in 1914; 169 persons were sent to the convalescent hospitals at Rose Bay ("Carrara"), Eastwood ("Denistone House"), and the Carrington Convalescent Home at Camden.

Length of Residence in New South Wales.—Of the 13,152 persons attending at the depôt, 7,228 were born in New South Wales; 3,248 had been resident in the State more than twenty years; 478 between ten and twenty years; 489 between five and ten years; 1,220 between one and five years, while 489 had been less than twelve months.

Ages.—Arranged in 10-year age groups, the greater number of applicants amongst the 13,152 claimed to be over 60 years, namely, 2,787; 1,930 were between 50 and 60; 1,565 between 40 and 50; 1,691 between 30 and 40; 2,227 between 20 and 30; 1,072 between 10 and 20; 843 between 5 and 10 and 1,037 under 5 years.

Nationality.—Of the total number, 13,152, those born in Australasia numbered 8,376, distributed as follows:—New South Wales, 7,228; Victoria, 510; Queensland, 201; New Zealand, 219; South Australia, 83; Tasmania, 135; and as in 1914 West Australia was not represented. Other countries were England, 2,438; Scotland, 622; Ireland, 1,059; France, 61; Germany, 43; Italy, 20; Norway, Sweden, and Denmark, 191; other Europeans, 92; India, 8; China, 36; other Asiatics, 64; Canada, 37; United States of America, 84; other Americans, 4; Africa, 13; and born at sea, 3.

Occupations.—The occupations were very varied, and comprised labourers, 3,133; gardeners, 140; carpenters, 139; painters, 109; bricklayers, 41; brickmakers and quarrymen, 11; miners, 78; engineers, 252; blacksmiths, 71; printers, 50; seamen, 318; clerks, 213; tailors, 71; butchers, 34; grocers, 22; bootmakers, 123; carters, 255; dealers, 97; cooks, bakers, &c., 309; servants, 880; dressmakers, 31; married women, 1,502; miscellaneous, 132, while 5,141 are given as no occupation.

Examinations for the Public Service.—In addition to the work indicated above examinations were made of candidates for appointment to the Public Service, of whom 602 presented themselves. Any special medical examinations required in connection with Public Servants, such as for retirement or other special purpose, were also undertaken by us.

Factories Acts.—Medical examinations required for the purpose of the Factories Act were also made, and numbered 3,296 as compared with 2,358 in 1914. The majority of the examinees were young persons seeking age-exemption certificates, or permits to work at certain trades.

Vaccinations were carried out daily at this depôt.

City Coroner.—At the request of the City Coroner 219 bodies were examined. Evidence was given at the Coroner's Court in connection with 56 of the deaths, and in 7 cases at the Central Criminal Court.

Medico-Legal.—Examinations were made in thirty-nine instances in cases of alleged rape and indecent assault, and twenty-nine examinations were made of clothing and other exhibits in criminal cases. Where necessary, evidence was subsequently given at the Children's and other Courts to assist the Crown Law Officers. All medico-legal cases pass through the hands of the Government Medical Officers before being sent on to the Government Analyst, the Microbiological Laboratory, or other Departments for further examination.

Evidence was also given in the higher courts in connection with action taken by the department under the Pure Food Act, in relation to false claims made in respect of certain proprietary preparations, &c.

Police Department.—345 candidates for the police force were examined, of whom 180 were successful. 113 probationers were re-examined at the end of twelve months service, and of these 112 passed into the Force as fit.

All members of the Police force on the sick list, were seen daily at the office of the Inspector-General of Police. The average daily number was 33.

Prisons Department.—The Long Bay Penitentiary has been visited from time to time for the purpose of certifying lunatics, or for examining prisoners for the purpose of subsequently giving evidence at the Courts. For some time past arrangements have been made whereby all prisoners charged with capital offences, or with any serious offence, in which the question of insanity may arise, are brought before the Government Medical Officers for examination as soon as possible after arrest. In addition, prisoners brought before the Courts about whom there was any doubt as to their fitness to travel to Long Bay were examined.

Lunacy Cases.—The Reception House at Darlinghurst was visited daily, and during the year 653 patients were certified as insane.

Miners' Accident Relief Board.—The meetings of this Board were attended for the purpose of assisting in every way with advice, and special examinations were carried out for the Board as required.

Navigation Department and Shipping Master's Office.—The Government Medical Officers for Sydney examine the harbour and sea pilots of Port Jackson, and several examinations were made in this connection during the year under review.

In every case where any doubt arose as to whether a seaman's ill-health would prevent him undertaking the return voyage to a distant port, he was sent by the Shipping Master to the Government Medical Officers for examination.

Claims for Injuries, &c.—In accident cases where legal action may be taken against the Government, the patients are examined, usually in consultation with their own medical advisers, and reports made.

From time to time country centres are visited in connection with accident cases or to hold investigations into hospital disputes, &c.

MOTOR AMBULANCE SERVICE.

As mentioned in the Report for 1914, the ambulance service is a very important adjunct of the Hospital Admission Depôt. The first motor ambulance had been in commission since July, 1912, and began to show signs of wear. It was converted into a motor lorry for conveying goods to and from the various institutions, and a new ambulance was obtained to replace it. The amount of work carried out by the two motor ambulances attached to the Depôt is contained in the following table:—

Motor Ambulance.	No. of Patients removed.	Miles travelled.	Hours occupied.
No. 2 (8,234)	1,487	13,500	2,550
,, 3 (10,383)	1,459	14,486	2,115
Total	2,946	27,986	4,665

DISINFECTING AND FUMIGATING STATION, WOOLLOOMOOLOO BAY.

The Disinfecting and Fumigating Station at Woolloomooloo Bay is also utilised in connection with the Hospital Admission Depôt. The motor ambulances are disinfected there daily, and sometimes two or three times each day when a number of infectious cases have been removed. Cabs and other vehicles to the number of 125, in which infectious diseases had been taken to hospital, were also treated there during the year. Fifteen parcels of clothing and bedding from premises in which cases of smallpox had occurred were disinfected by the staff at this Depôt. Considerable assistance was also rendered to the military authorities, the work carried out on their behalf included the fumigation and disinfection of 2,258 great coats, 5,527 blankets, 2,168 sheets, 1,014 pillows, 2,196 pillow-slips, 1,990 hammocks, 349 tunics, 209 pairs trousers, 15 mattresses, 12 towels, and 7 cases of sundries.

ARTHUR A. PALMER,
Government Medical Officer for Sydney

SUMMARY OF QUARTERLY REPORTS.

The provisions of the Public Health Act, 1902, and Regulations thereunder, require Local Authorities to submit quarterly reports respecting the health of their districts. These reports have been summarised in the following tables;—

SUMMARY of Quarterly Returns from Local Authorities showing the action taken by them under the Public Health Act, 1902, during 1915.

I.—Abstract of Reports made by Local Authorities in the Metropolitan Combined District. Number of Municipalities, 53 ; of Shires, 3. Estimated Population, 752,500.

		Part III. Infectious Diseases. No. of Notifications received.							Disinfection.					Prevention of Infectious Disease.				Common Lodging-houses.		Part VI. *Buildings.			Part VII. Nuisances.					Part VIII. Polluted Water Supply.		Legal Proceedings taken.					
		Cerebro Spinal Meningitis.	Malaria.	Infantile Paralysis.	Scarlet Fever.	Diphtheria.	Typhoid Fever.	Total.	No. of Premises disinfected by L. A.	No. of Premises disinfected by Householders and certified by Medical Practitioners.	Total.	No. of Articles destroyed by L.A.	No. of Public Vehicles disinfected by L.A.	No. of Cases in which special pail service was provided for removal of typhoid excreta.	No. of Notices served on Householders, Schedule E.	No. of Notices served on School Teachers, Schedule D.	No. of Prosecutions for exposure of infected persons or articles.	No. in District.	Total No. of visits of Inspectors.	No. of Dwelling-houses inspected under Part VI.	No. of Closing Orders made. Sec. 16 P.H. (Amendment) Act, 1915.	No. of Demolitions carried out.	No. of Complaints of nuisance received.	No. of Notices to abate issued under Section 65.	No. of Nuisances abated.	No. of Cesspits in District.*	No. of Cesspits filled up during the Quarter.*	No. of sources of polluted water supply closed during Quarter.	No. of Notices served to abate pollution of streams.		Under Part III.	Under Part VI.	Under Part VII.	Under Part VIII.	Total.
For the Quarter ending March 31st, 1915.	From Med. Practitioners.	..	7	6	1,136	693	201	2,043																					No. of Prosecutions..	4	20			24
	From Householders.....	..	..	..	..	..	..	..																					No. of Convictions ..	4	20			24
	Total.....	..	7	6	1,136	693	201	2,043	671	281	952	7	..	17	312	232	1	49	352	11,226	69	7	925	1,375	1,624	92	1	92	1					
For the Quarter ending June 30th, 1915.	From Med. Practitioners..	..	25	3	1,470	867	210	2,575																					No. of Prosecutions..			55		55
	From Householders.....	..	..	..	7	..	..	7																					No. of Convictions ..			54		54
	Total.....	..	25	3	1,477	867	210	2,582	816	420	1,236	..	..	10	1,780	1,227	..	49	143	11,094	127	15	879	1,645	1,650	89	..	..	..					
For the Quarter ending September 30th, 1915.	From Med. Practitioners,.	..	7	3	1,247	682	130	2,069																					No. of Prosecutions..		5	6		11
	From Householders.....	..	..	..	1	..	..	1																					No. of Convictions ..		5	6		11
	Total	..	7	3	1,248	682	130	2,070	523	298	821	..	..	7	1,284	805	1	..	..	2,237	43	7	572	1,111	991	94	1	..	..					
For the Quarter ending December 31st, 1915.	From Med. Practitioners..	13	5	37	1,735	700	229	2,719																					No. of Prosecutions..		6	3		9
	From Householders.....	..	..	..	2	..	..	2																					No. of Convictions ..		6	3		9
	Total.....	13	5	37	1,737	700	229	2,721	787	391	1,178	60	..	19	1,775	1,060	..	50	152	10,717	22	12	923	1,279	1,589	92	1	..	..					
Totals....	From Med. Practitioners..	13	44	49	5,588	2,942	770	9,406																					No. of Prosecutions..	4	31	64		99
	From Householders.....	..	..	..	10	..	..	10																					No. of Convictions ..	4	31	63		98
		13	44	49	5,598	2,942	770	9,416	2,757	1,390	4,187	67	..	53	5,151	3,324	2	118	647	33,274	261	41	3,296	5,410	6,854	367	3	92	1					

II.—Abstract of Reports made by Local Authorities in the Hunter River Combined District. Number of Municipalities, 18 ; of Shires, 5. Estimated Population, 105,718.

For the Quarter ending March 31st, 1915.	From Med. Practitioners..	..	..	..	83	39	41	163																					No. of Prosecutions ..	..	..	..	..	..
	From Householders.....	..	..	..	..	..	..	..																					No. of Convictions ..	..	..	..	..	..
	Total.....	..	..	..	83	39	41	163	98	45	143	..	10	10	158	107	..	7	10	48	26	5	11	21	18	65	17	....	..					
For the Quarter ending June 30th, 1915.	From Med. Practitioners..	..	2	..	122	56	28	208																					No. of Prosecutions ..	..	..	1	..	1
	From Householders.....	..	..	..	9	3	1	13																					No. of Convictions ..	..	..	1	..	1
	Total.....	..	2	..	131	59	29	221	109	38	147	..	7	9	173	112	..	7	6	38	44	5	23	21	30	47	1	....	..					
For the Quarter ending September 30th, 1915.	From Med. Practitioners..	..	..	..	49	66	9	124																					No. of Prosecutions ..	..	..	..	..	..
	From Householders.....	..	..	..	1	..	1	2																					No. of Convictions ..	..	..	..	..	..
	Total.....	..	..	..	50	66	10	126	73	16	89	..	6	3	102	71	..	6	10	7	..	2	26	12	17	41	6	....	..					
For the Quarter ending December 31st, 1915.	From Med. Practitioners..	..	1	..	120	51	26	198																					No. of Prosecutions ..	..	..	..	..	..
	From Householders.....	..	..	..	6	5	..	11																					No. of Convictions ..	..	..	..	..	..
	Total.....	..	1	..	126	56	26	209	169	18	187	..	6	18	135	88	..	5	10	14	6	5	34	29	39	36	5	....	..					
Totals ..	From Med. Practitioners..	..	3	..	374	212	104	693																					No. of Prosecutions ..	..	..	1	..	1
	From Householders.....	..	..	..	16	8	2	26																					No. of Convictions ..	..	..	1	..	1
		..	3	..	390	220	106	719	449	117	566	..	29	40	568	378	..	25	36	107	76	17	94	83	104	189	29	....	..					

*This information is required from Municipal Local Authorities only.

II.—Abstract of Reports made by Local Authorities in the remainder of New South Wales. Number of Municipalities, 119; of Shires, 126; of Police Districts, 11. Estimated Population, 1,009,015.

		Part III. Infectious Diseases. No. of Notifications received.							Disinfection.					Prevention of Infectious Disease.				Common Lodging-houses.		Part VI. * Buildings.			Part VII. Nuisances.					Part VIII. Poluted Water Supply.		Legal Proceedings taken.					
		Cerebro-Spinal Meningitis	Malaria.	Infantile Paralysis.	Scarlet Fever.	Diphtheria.	Typhoid Fever.	Total.	No. of Premises disinfected by L.A.	No. of Premises disinfected by Householders and certified by Medical Practitioners.	Total.	No. of Articles destroyed by L.A.	No. of Public Vehicles disinfected by L.A.	No. of Cases in which special pail service was provided for removal of typhoid excreta.	No. of Notices served on Householders, Schedule E.	No. of Notices served on School Teachers, Schedule D.	No. of Prosecutions for exposure of infected persons or articles.	No. of District.	Total No. of Visits of Inspector.	No. of Dwelling-houses inspected under Part VI.	No. of Closing Orders made, Sec. 16 P.H. (Amendment) Act, 1915.	No. of Demolitions carried out.	No. of Complaints of nuisance received.	No. of Notices to abate issued under Sec. 65.	No. of Nuisances abated.	No. of Cesspits in District.*	No. of Cesspits filled up during the Quarter.*	No. of sources of polluted water supply closed during Quarter.	No. of Notices served to abate pollution of streams.		Under Part III.	Under Part VI.	Under Part VII.	Under Part VIII.	Total.
For the Quarter ending March 31st, 1915.	From Med. Praetitioners	..	..	5	426	942	456	1,829																						No. of Prosecutions	2	1	3	3	9
	From Householders	..	..	..	2	8	7	17																						No. of Convictions	1	1	2	3	7
	Total	..	..	5	428	950	463	1,846	702	235	937	6	26	175	1,200	817	1	10	54	378	106	26	103	248	2,211	186	34	....	..					
For the Quarter ending June 30th, 1915.	From Med. Practitioners	..	1	5	855	990	295	2,146																						No. of Prosecutions	1	2	3	..	6
	From Householders	..	..	..	29	16	..	45																						No. of Convictions	..	2	2	..	4
	Total	..	1	5	884	1,006	295	2,191	776	226	1,002	116	19	255	1,446	1,012	..	9	61	337	135	15	164	291	347	185	9	2	4					
For the Quarter ending September 30th, 1915.	From Med. Practitioners	..	1	1	725	525	94	1,346																						No. of Prosecutions	1	..	3	1	5
	From Householders	..	..	..	17	8	1	26																						No. of Convictions	1	..	3	1	5
	Total	..	1	1	742	533	95	1,372	417	162	579	33	14	98	955	591	7	18	76	947	62	6	103	248	230	234	166	....	5					
For the Quarter ending December 31st, 1915.	From Med. Practitioners	2	..	5	1,293	742	182	2,224																						No. of Prosecutions	1	..	..	..	1
	From Householders	..	..	..	13	14	6	33																						No. of Convictions	1	..	..	..	1
	Total	2	..	5	1,306	756	188	2,257	798	150	948	2	21	182	1,516	1,025	1	25	48	272	111	28	69	299	181	412	5	....	2					
Totals	From Med. Practitioners	2	2	16	3,299	3,199	1,027	7,545																						No. of Prosecutions	5	3	9	4	21
	From Householders	..	..	..	61	46	14	121																						No. of Convictions	3	3	7	4	17
		2	2	16	3,360	3,245	1,041	7,666	2,693	773	3,466	157	80	690	5,117	3,445	9	62	239	1,934	414	75	439	996	2,969	1,017	214	2	11					

IV.—Abstract of Quarterly Reports made by Local Authorities in New South Wales. No. of Municipalities, 190; of Shires, 134; of Police Districts, 11. Estimated Population, 1,867,233.

For the Quarter ending March 31st, 1915.	From Med. Practitioners	..	7	11	1,645	1,674	638	4,035																						No. of Prosecutions	6	21	3	3	33
	From Householders	..	..	..	2	8	7	17																						No. of Convictions	5	21	2	3	31
	Total	..	7	11	1,647	1,682	705	4,052	1,471	561	2,032	13	36	202	1,670	1,156	2	66	416	11,652	201	38	1,036	1,644	3,863	343	52	92	1					
For the Quarter ending June 30th, 1915.	From Med. Practitioners	..	28	8	2,447	1,913	533	4,929																						No. of Prosecutions	1	2	59	..	62
	From Householders	..	..	..	45	19	1	65																						No. of Convictions	..	2	57	..	59
	Total	..	28	8	2,492	1,932	534	4,994	1,701	684	2,385	129	62	274	3,399	2,351	..	55	210	11,469	306	40	1,066	1,957	2,027	291	10	2	4					
For the Quarter ending September 30th, 1915.	From Med. Practitioners	..	8	4	2,021	1,273	673	3,979																						No. of Prosecutions	1	5	9	1	16
	From Householders	..	..	..	19	8	2	29																						No. of Convictions	1	5	9	1	16
	Total	..	8	4	2,040	1,281	675	4,008	1,013	476	1,489	33	20	108	2,314	1,467	8	23	86	3,191	105	15	701	1,371	1,238	369	173	....	5					
For the Quarter ending December 31st, 1915.	From Med. Practitioners	15	6	42	3,148	1,493	437	5,141																						No. of Prosecutions	1	6	3	..	10
	From Householders	..	..	..	21	19	6	46																						No. of Convictions	1	6	3	..	10
	Total	15	6	42	3,169	1,512	443	5,187	1,754	559	2,313	62	27	219	3,426	2,173	1	80	200	11,203	139	45	1,026	1,517	1,809	540	6	....	2					
Totals	From Med. Practitioners	15	49	65	9,261	6,353	2,341	18,084																						No. of Prosecutions	9	34	74	4	121
	From Householders	..	..	..	87	54	16	157																						No. of Convictions	7	34	71	4	116
		15	49	65	9,348	6,407	2,357	18,241	5,939	2,280	8,219	237	145	803	10,809	7,147	11	224	912	37,515	751	138	3,829	6,489	8,937	1,543	241	94	12					

*This information is required from Municipal Local Authorities only.

STATEMENT of Municipalities and Shires who reported 25 cases and over of Infectious diseases in any one quarter during the year 1915.

District.	1st Quarter.						2nd Quarter.						3rd Quarter.						4th Quarter.						Total for Year.						Population, 31st December, 1913.
	Cerebro-Spinal Meningitis.	Infantile Paralysis.	Malaria.	Scarlet Fever.	Diphtheria.	Typhoid Fever.	Total	Cerebro-Spinal Meningitis.	Infantile Paralysis.	Malaria.	Scarlet Fever.	Diphtheria.	Typhoid Fever.	Total.	Cerebro-Spinal Meningitis.	Infantile Paralysis.	Malaria.	Scarlet Fever.	Diphtheria.	Typhoid Fever.	Total.	Cerebro-Spinal Meningitis.	Infantile Paralysis.	Malaria.	Scarlet Fever.	Diphtheria.	Typhoid Fever.	Total.	Cerebro-Spinal Meningitis.	Infantile Paralysis.	Malaria.	Scarlet Fever.	Diphtheria.	Typhoid Fever.	Total.	
Municipalities.	METROPOLITAN COMBINED SANITARY DISTRICTS.																														
Sydney, City of *	..	1	1	96	60	23	181	..	3	1	149	82	21	256	Did not report.							..	7	2	112	87	23	231	..	11	4	357	229	67	668	115900
Alexandria	..	..	..	10	2	1	13	..	..	..	16	5	6	27	..	..	1	19	4	7	31	..	1	..	27	6	6	40	..	1	1	72	17	20	111	11,260
Annandale	..	..	..	20	11	..	31	..	..	..	11	11	1	23	..	..	..	11	5	..	16	..	1	..	20	7	1	29	..	1	..	62	34	2	99	12,320
Ashfield	..	..	..	21	4	1	26	..	..	..	16	4	2	22	..	..	..	34	8	1	43	..	..	..	42	3	1	46	..	..	..	113	10	5	137	25,13
Balmain	..	..	4	34	25	1	64	..	..	4	54	25	1	84	..	..	..	33	26	1	65	..	..	..	26	13	9	48	..	..	8	147	89	12	256	33,450
Bexley	..	..	..	22	9	..	31	..	..	..	11	5	..	16	..	..	..	9	3	1	13	..	..	..	9	9	..	18	..	..	..	51	26	1	78	8,840
Botany	..	..	..	14	7	57	78	..	..	..	21	4	33	58	..	..	..	23	11	..	34	..	..	..	5	2	12	19	..	..	..	63	24	102	189	5,280
Burwood	..	..	..	9	10	4	23	..	..	1	22	7	4	34	..	..	..	22	7	2	31	..	..	..	16	..	1	17	..	..	1	69	24	11	105	11,140
Canterbury	..	..	..	56	30	5	91	..	..	..	75	24	5	104	..	..	..	44	14	2	60	..	2	..	71	14	3	100	..	2	..	246	82	15	345	19,370
Drummoyne	Did not report.							..	..	1	8	4	..	13	..	..	..	16	3	1	20	..	1	..	24	1	2	28	..	1	1	48	8	3	61	11,650
Glebe	..	..	..	30	18	4	52	..	..	..	23	27	2	52	..	..	1	15	19	15	50	..	1	..	33	14	6	54	..	1	1	101	78	27	208	22,940
Granville	..	..	1	14	6	4	25	..	..	..	23	5	1	29	..	..	1	33	4	1	39	..	..	..	12	1	..	13	..	..	2	82	16	6	106	9,400
Hurstville	..	..	..	15	22	..	37	..	..	..	20	10	2	32	..	..	..	23	4	1	28	..	..	..	27	5	5	37	..	..	..	85	41	8	134	9,120
Kogarah	..	..	..	21	18	2	41	..	..	..	30	8	4	42	..	..	..	18	6	2	26	4	1	..	12	6	7	30	4	1	..	81	38	15	139	10,480
Leichhardt	Did not report.							Did not report.							Did not report.							2	1	..	38	10	3	54	2	1	..	38	10	3	54	27,020
Liverpool	..	..	..	14	5	3	22	..	..	..	6	6	2	14	..	..	..	5	4	1	10	..	..	2	8	4	3	17	..	..	2	33	19	9	63	3,960
Manly	..	..	..	3	11	4	18	..	..	..	12	2	5	19	..	..	..	8	9	1	18	..	..	..	22	3	10	35	..	..	..	45	25	20	90	12,690
Marrickville	Did not report.							..	..	..	73	22	5	100	..	..	..	67	13	..	80	..	1	..	70	18	3	92	..	1	..	210	53	8	272	35,150
Mascot	..	..	..	17	9	8	34	..	..	..	13	6	6	25	..	..	..	16	8	..	24	..	..	..	11	2	5	18	..	..	..	57	25	19	101	7,570
Newtown	..	..	..	47	18	7	72	..	..	..	63	16	4	83	..	..	..	41	17	6	64	..	4	..	61	19	4	88	..	4	..	212	70	21	307	28,010
North Sydney	..	..	..	21	8	4	33	..	..	..	29	15	1	45	..	..	1	54	8	6	69	..	..	..	52	18	2	72	..	..	1	156	49	13	219	39,270
Paddington	..	..	..	13	6	..	19	..	..	9	28	8	4	49	..	..	..	31	16	2	49	..	2	..	20	19	3	44	..	2	9	92	49	9	161	26,000
Parramatta†	..	..	..	32	22	7	61	..	..	..	32	26	1	59	..	..	..	28	10	5	43	..	1	..	43	8	1	53	..	1	..	135	66	14	216	12,600
Petersham‡	..	..	..	20	13	8	41	..	..	..	23	11	12	46	..	..	..	34	10	14	58	..	2	..	44	7	1	54	..	2	..	121	41	35	199	23,600
Prospect & Sherwood	..	..	..	8	5	..	13	..	..	..	29	2	1	32	..	..	..	14	..	..	14	..	..	..	13	2	..	15	..	..	..	64	9	1	74	4,150
Randwick§	..	2	..	355	251	56	664	..	1	6	326	312	45	690	..	..	1	300	298	10	609	2	1	1	433	270	23	739	2	4	8	1,394	1,160	134	2,702	27,560
Redfern	..	..	..	24	18	12	54	..	..	..	41	26	9	76	..	..	..	61	34	7	102	..	1	..	66	29	10	106	..	1	..	192	107	38	338	25,340
Rockdale	..	..	..	36	26	2	64	..	..	..	26	17	3	46	..	..	1	21	11	..	33	..	..	..	50	10	11	71	..	..	1	133	64	16	214	17,870
Municipalities.																																			
Ryde	..	..	..	8	2	..	10	..	..	..	8	4	..	12	..	..	..	11	5	..	16	..	3	..	49	6	..	58	..	3	..	76	17	..	96	7,390
St. Peters	..	..	..	8	7	1	16	..	..	2	17	14	2	35	..	..	..	27	6	1	34	..	..	..	31	11	1	43	..	..	2	83	38	5	128	10,120
Waterloo	..	..	..	26	7	9	42	..	..	..	28	13	4	45	..	..	..	27	11	7	45	..	..	..	24	6	10	40	..	..	..	105	37	30	172	11,050
Waverley	..	..	1	13	16	2	32	..	..	1	35	14	..	50	..	..	..	27	11	..	38	..	1	..	25	16	3	45	..	1	2	100	57	5	165	24,700
Willoughby‖	Did not report.							..	..	..	47	42	2	91	..	..	..	48	24	5	77	..	..	..	32	17	11	60	..	..	..	127	83	16	228	17,650
Woollahra	..	..	..	8	12	2	22	..	..	..	11	12	2	25	..	..	..	17	14	..	31	..	3	..	26	15	1	45	..	3	..	62	53	5	123	19,200
Shires.																																			
Hornsby	..	..	..	19	3	3	25	..	..	..	37	16	1	54	..	..	..	30	10	1	41	1	..	..	44	6	4	55	1	..	..	130	35	9	175	10,500
Ku-ring-Gai	..	..	..	2	6	6	14	..	..	..	17	10	..	27	..	..	..	16	7	1	24	1	..	..	11	4	14	30	1	..	..	46	27	21	95	12,140
Municipalities.	HUNTER RIVER COMBINED SANITARY DISTRICTS.																														
Hamilton	..	..	..	16	5	4	25	..	..	..	21	..	..	21	..	..	..	5	3	1	9	..	..	..	..	3	..	3	..	..	..	42	11	5	58	8,800
West Maitland	..	..	..	9	6	14	29	..	..	..	20	16	16	52	..	..	..	14	8	1	23	..	..	..	6	3	5	14	..	..	..	49	33	36	118	8,650
Shires.																																			
Cessnock	Did not report.							Did not report.							..	..	11	31	..	42	..	..	..	14	12	9	35	..	..	..	25	43	9	77	25,300
Tarro	..	..	..	4	1	..	5	..	..	..	3	..	3	..	..	..	2	2	..	4	..	..	..	52	1	1	54	..	..	..	58	7	1	66	6,850
Municipalities.	THE REMAINDER OF THE STATE.																														
Albury	..	..	..	..	29	7	36	..	..	..	3	42	5	50	..	..	..	4	8	..	12	..	..	..	11	7	15	33	..	..	..	18	86	37	131	6,750
Armidale	..	..	..	2	18	7	22	..	..	..	5	20	4	29	..	..	..	5	18	..	13	..	..	..	49	29	2	80	..	..	..	61	80	13	154	5,200
Bathurst	..	..	..	24	21	16	61	..	..	..	83	17	5	105	..	..	..	20	6	1	27	..	..	..	7	14	..	21	..	..	..	134	58	22	214	8,650
Bombala	..	..	..	3	..	..	3	..	..	..	44	..	..	44	..	..	..	15	..	..	15	..	..	..	1	4	..	5	..	..	..	63	4	..	67	1,000
Broken Hill ¶	..	..	..	15	123	52	190	..	..	..	21	163	41	225	..	..	..	27	81	14	122	..	..	..	29	83	24	136	..	..	..	92	450	131	673	33,900
Corowa	Did not report.							..	..	..	3	31	4	38	..	..	..	..	9	..	9	..	..	..	..	5	..	5	..	..	..	3	45	4	52	2,250
Dubbo	,,		,,					..	..	..	19	35	11	65	..	..	..	8	13	5	26	..	..	..	4	14	1	19	..	..	..	31	62	17	110	4,700
Forbes	..	..	..	2	2	14	18	..	..	..	34	5	5	44	Did not report.							..	..	..	16	7	6	29	..	..	..	52	14	25	91	4,909
Goulburn**	..	1	..	29	119	41	190	..	..	..	26	80	6	112	..	..	..	26	20	3	49	..	..	..	3	28	1	32	..	1	..	84	247	51	383	10,100
Inverell	..	..	..	5	25	12	42	..	..	..	13	36	..	49	..	..	..	11	15	..	26	..	..	..	9	39	42	90	..	..	..	38	115	54	207	5,050
Junee	..	..	..	..	7	2	9	..	..	..	..	7	3	10	..	1	..	..	5	..	6	..	..	..	25	9	..	34	..	1	..	25	28	5	59	2,700
Lithgow	..	..	..	21	9	4	34	..	..	..	19	4	3	26	..	..	..	23	..	..	23	..	..	..	340	2	3	345	..	..	..	403	15	10	428	8,700
Mudgee	..	..	..	9	..	8	17	..	..	..	91	1	1	93	..	..	..	53	2	..	55	..	..	..	52	1	..	53	..	..	..	205	4	9	218	3,050
Narrabri	..	..	..	..	8	10	18	..	..	..	3	13	15	31	..	..	..	..	..	2	2	..	..	..	7	..	..	7	..	..	..	10	21	27	58	2,500
Orange	..	..	..	11	12	13	36	..	..	..	31	16	11	58	..	..	..	8	17	1	26	..	..	..	14	28	1	43	..	..	..	64	73	26	163	7,100
Tamworth	..	..	..	3	1	8	12	..	..	..	7	2	21	30	..	..	..	1	1	3	5	..	..	..	2	2	5	9	..	..	..	13	6	37	56	7,600
Wagga Wagga	..	..	..	2	14	7	23	..	..	..	23	24	3	40	..	..	..	11	7	..	18	..	..	..	17	7	..	24	..	..	..	53	52	10	115	6,900
Wellington	..	..	..	17	17	24	58	..	..	..	4	8	3	15	..	..	..	11	10	2	23	..	..	..	16	11	..	27	..	..	..	48	46	29	123	4,200
Wollongong	Did not report.							..	..	..	26	2	..	28	..	..	..	43	3	2	48	..	..	..	11	7	..	18	..	..	..	80	12	2	94	5,000
Shires.																																			
Bibbenluke	..	..	..	10	..	..	10	..	..	..	19	..	..	19	..	..	..	76	6	..	82	..	..	..	19	4	..	23	..	..	..	124	10	..	134	3,050
Boree	..	..	..	..	19	3	22	..	..	..	18	9	2	29	..	..	..	10	4	..	14	..	..	..	12	16	6	34	..	..	..	40	48	13	101	6,000
Bulli	..	..	..	19	2	2	23	..	..	..	44	2	1	47	..	..	..	2	..	..	2	..	..	..	10	..	..	10	..	..	..	75	4	3	82	15,800
Dumaresq	..	..	..	4	10	..	14	..	..	..	3	5	1	9	..	..	..	1	10	1	12	..	..	..	28	15	1	44	..	..	..	36	40	3	79	5,000
Gunning	..	..	..	..	9	2	11	..	..	..	3	24	4	31	..	..	..	2	1	..	3	..	..	..	..	1	..	1	..	..	..	5	35	6	46	3,300
Guyra	..	..	..	2	8	1	11	..	..	..	9	8	..	17	Report no action taken.							..	..	..	10	18	..	28	..	..	..	21	34	1	56	7,400
Weddin	Did not report.							..	..	..	4	12	3	19	..	..	..	..	10	1	11	..	..	..	15	12	..	27	..	..	..	29	24	4	57	5,300

* Including Sydney Hospital and R. P. A. Hospital from Coast Hospital but admitted from other districts. † Including District Hospital. ‡ Including Lewisham Hospital. § Including 2,457 cases notified ‖ Including North Sydney Hospital. ¶ Including Broken Hill District Hospital. ** Including Goulburn Hospital.

EXHUMATION OF BODIES, AND BURIALS IN CLOSED CEMETERIES.

Supervision of these matters, formerly in the hands of the Lands Department, was transferred to the Board of Health as from 1st January, 1906.

The following table shows the permits issued for exhumations, and for burials in closed cemeteries, each year from 1906 to 1915, both inclusive :—

Year.	Exhumation Permits Granted for—					Permits granted to bury in closed cemeteries.	Year.	Exhumation Permits Granted for—					Permits granted to bury in closed cemeteries.
	Re-interment in same cemetery. N.S.W.	Re-interment in distant cemetery. N.S.W.	Return of remains to China.	Return of remains to other countries.	Total.			Re-interment in same cemetery. N.S.W.	Re-interment in distant cemetery. N.S.W.	Return of remains to China.	Return of remains to other countries.	Total.	
1906	43	27	124	2	195	11	1912	75	52	87	1	215	10
1907	50	52	44	2	148	4	1913	91	41	37	3	172	2
1908	49	30	8	3	90	9	1914	97	65	80	6	248	6
1909	70	36	15	2	123	7	1915	84	35	43	1	163	2
1910	82	35	13	1	131	7							
1911	62	34	80	1	177	3	Total...	703	407	531	22	1,663	61

UNIVERSITY OF ILLINOIS LIBRARY
FEB 10 1922

PART II.

1.—Metropolitan Combined Sanitary Districts.

Report of the Acting Medical Officer of Health (Dr. F. M. Suckling) for 1915.

2.—Hunter River Combined Sanitary Districts.

Report of the Acting Medical Officer of Health (Dr. J. Booth-Clarkson) for 1915.

6968ɛ—F

PART II.

1.—Metropolitan Combined Sanitary Districts.

Report of the Acting Medical Officer of Health for the Year 1915.

F. M. Suckling, M.B., Ch.M., D.P.H. (Syd.), D.T.M. & H. (Camb.), to the Local Sanitary Authorities of the Metropolitan Combined Districts of Sydney.

159 Queen Victoria Markets, George-street, Sydney.

I HAVE the honor to present the Report on the conditions as to health of the sanitary districts of the Metropolis of Sydney for the year 1915.

Dr. Purdy the Medical Officer of Health for Sydney is still absent on active service.

The health experience of Sydney, as gauged by the morbidity and mortality returns for the year 1915 may be considered satisfactory, the death rate being 10·23 per 1,000 of the population. This rate is equal to the average of the preceding five years, although higher than that of 1914, which, however, is the lowest rate recorded in the Metropolis.

The deaths of children under 1 year of age within the Metropolitan area totalled 1,585 or 72 per 1,000 births. This rate, although not so favourable as that of 1914, is yet below the average of the previous five years, which were all years of low infantile mortality. An exceptional infantile mortality was experienced at the close of the year due to diarrhœal diseases, and this materially affected the year's rate.

The epidemic of smallpox which began in Sydney in 1913 persisted in a desultory manner during the year 1915. Twenty-five cases were reported in the Metropolitan area from 1st January to 25th March, 1915; then occurred a period of immunity for several months until 30th August, when from that date 17 cases were notified up to 20th December. The second outbreak was apparently due to the re-introduction of the disease from the Newcastle district. No deaths occurred from this disease. The quarantine embargo placed on Sydney by the Federal Government was removed on 18th May, 1915.

Diphtheria and scarlet fever were widely prevalent throughout the year, 2,295 cases with 95 deaths, and 4,190 cases with 48 deaths being notified respectively; 746 cases of typhoid fever were notified in 1915, being 130 cases in excess of the number for 1914.

No case of plague was reported.

Infantile paralysis was not so prevalent as during the previous year.

In 1915 malaria, cerebro-spinal meningitis, and pulmonary tuberculosis became notifiable diseases, and are dealt with specifically under their respective headings in this report.

An epidemic of measles resulting in 171 deaths existed during the year.

POPULATION.

The district included within the Metropolitan combined sanitary districts is considered under three heads:—

1. Sydney and suburbs, which includes the City of Sydney and forty suburban municipalities, and one shire (Kuring-gai).
2. The extra Metropolitan municipalities: Auburn, Bankstown, Cabramatta and Canley Vale, Dundas, Ermington and Rydalmere, Granville, Lidcombe, Liverpool, Parramatta, Prospect and Sherwood, Smithfield and Fairfield.
3. The shires of Warringah and Hornsby (Ridings B and C only in each shire).

The shires of Warringah and Hornsby are not dealt with statistically, and the extra Metropolitan municipalities are separately treated for the Metropolis statistically.

The

The population of the Metropolis proper (Sydney and suburbs) was estimated by the Government Statistician to be 763,000 on 31st December, 1915, of which the City of Sydney contained 104,200, and the suburbs (including the shire of Kuring-gai) 658,800. The City population again shows a decrease of 6,500, no doubt due to City improvement schemes, whilst the suburban population increased by 17,000.

The mean population for the year was estimated by the Statistician to be 757,750.

In this report the estimated population figures have only been departed from in two instances, the municipalities of Hunter's Hill and Leichhardt, since each contains large mental hospitals. As in previous reports, deaths among inmates of these hospitals have been distributed to the districts in which they had previously resided, and consequently it was necessary to exclude such inmates from the estimate of the population. The hospitals in question were Gladesville (1,211 inmates) and Callan Park (1,192 inmates).

BIRTHS.

According to the Government Statistician the number of births registered in the Metropolis during the year was 20,871, equivalent to a rate of 27·54 per 1,000 of the population. The number of births is the highest ever recorded for the Metropolis, but the rate, which is 2·5 per cent. below the average of the previous five years, is the lowest since 1910.

The number of illegitimate children born was 1,480, or 7·09 per cent. of the total births, and equivalent to 1·95 per 1,000 of the population. Of these children, 61·0 per cent. were born in public institutions.

DEATHS.

The recorded deaths of residents in the Metropolis proper totalled 7,755, equivalent to a rate of 10·23 per 1,000 of the population. The rate is equal to the average of the preceding five years, but higher than that of 1914, which is the lowest rate (9·8) recorded for the Metropolis.

These figures do not include deaths of former Metropolitan residents which occurred in the Benevolent Asylums of Liverpool, Parramatta, Rookwood, and Newington.

It has been found to be impossible to obtain correct addresses of the deceased inmates before they enter these institutions, yet such deaths cannot be entirely ignored in the estimation of mortality figures, since some proportion of the inmates previously resided in Sydney and suburbs.

It is considered, however, possible to make due corrections for such deaths by multiplying the number of recorhded deaths of residents by a factor obtained by dividing the total deaths in New South Wales by the total deaths less institution deaths.

The recorded death rate for the Metropolis when thus corrected for institutional deaths becomes decreased from 10·81 as given above to 9·31 per 1 000.

For individual diseases the requisite correction is more complicated and has not been applied except with regard to pulmonary tuberculosis (for which see under the heading of Tuberculosis).

Diseases of the heart and blood vessels (including cerebral hæmorrhage) accounted for 1,220 deaths in 1915, which is a decrease of 69 deaths on the number recorded in 1914. Cancer caused 607 deaths, pneumonia 603, and diarrhœal diseases 656 deaths. Whooping cough shows a decreased mortality, there having been 24 deaths from this diseases as compared with 48 deaths in the year 1914.

Measles shows a marked increase in mortality, with 171 deaths in 1915 as compared with 3 deaths in 1914. Scarlet fever shows a heavier mortality in 1915 compared with the year 1914 owing to the widespread epidemic of the disease. The deaths from typhoid fever were less than those of the previous year, viz., 74, as compared with 82 in 1914.

The recorded number of deaths from certain diseases will be found given in various tables in this report and more particularly in Table No. 13. In some cases the figures differ from those supplied by the Government Statistician for reasons previously mentioned.

An examination of Table 1 shows that the highest death rate from all causes in the Metropolis was experienced in the municipality of Hunter's Hill, where 29·62 deaths per 1,000 were recorded. Among municipalities with more than 10,000 residents Leichhardt, with 14·15 deaths per 1,000, the City of Sydney (13·39), and Paddington (12·20), had the highest general death rates. To Concord, with a population of 6,150 and a density of 2·3 per acre, and Drummoyne, with a population of 13,210 and a density of 6·09 per acre, are credited the lowest death rates, 5·85 and 5·68 per 1,000 respectively. Of the extra Metropolitan districts, Lidcombe and Liverpool experienced the highest death rates, whilst Bankstown and Dundas had the lowest.

TABLE 1.

SHOWING Population, density of Population, and certain Death-rates in the Municipalities of the Metropolitan Combined Sanitary Districts for 1915, including deaths which have occured in General Hospitals, Special Hospitals for Consumption, and Mental Hospitals. Deaths in Hospitals have been distributed to their proper districts before calculating these rates.

District.	Estimated Mean Population.	Density of Population to the Acre.	Death-rates per 1,000 of Population.					Infantile Death-rate per 1,000 Births.
			All Causes.	Diarrhœal Diseases, including Enteritis.	Principal Zymotic Diseases except Diarrhœa.	Phthisis.	All Tubercular Diseases.	
City of Sydney	107,450	37·2	13·39	·68	·77	·70	·78	87
Alexandria	11,520	11·3	11·37	1·48	1·04	·43	·43	131
Annandale	12,550	34·9	9·48	·64	·24	·64	·64	60
Ashfield	27,240	13·1	9·03	·40	·33	·55	·81	45
Balmain	33,780	36·0	9·95	1·21	·83	·33	·53	93
Bexley	10,120	5·3	6·62	1·09	·40	·49	·69	51
Botany	5,660	2·6	9·19	1·24	1·77	·71	·71	83
Burwood	12,260	11·7	11·17	1·31	·24	·65	·73	69
Canterbury	23,400	2·8	8·21	·56	·90	·43	·56	49
Concord	6,150	2·3	5·85	·65	·16	·16	·16	58
Darlington	3,920	89·1	10·20	·26	2·04	·77	1·02	83
Drummoyne	13,210	6·9	5·68	·38	·23	·08	·15	81
Eastwood	1,360	·5	13·24	1·47	...	1·47	1·47	119
Enfield	5,410	3·2	10·35	2·40	·55	·37	·55	62
Erskineville	7,800	47·0	10·00	1·67	·64	·51	·51	52
Glebe	23,090	44·3	9·44	·87	·56	·17	·26	67
Homebush	1,020	1·6	24·51	2·94	...	·98	1·96	172
Hunter's Hill	4,389	4·2	29·62	1·82	·46	2·28	2·28	38
Hurstville	10,160	1·5	8·27	·98	·49	·49	·59	61
Kogarah	12,020	2·7	9·90	1,25	·50	·83	·92	60
Lane Cove	4,740	1·9	6·75	1·05	·42	...	...	78
Leichhardt	26,708	24·0	14·15	1·20	·97	·79	·82	79
Manly	13,770	5·7	8·93	1.16	·22	·15	·22	103
Marrickville	37,200	18·5	8·74	·70	·46	·54	·56	46
Mascot	8,380	3·7	12·29	2·15	1·55	·48	·60	148
Mosman	16,900	8·2	7·87	·30	·30	.41	·53	32
Newtown	28,190	63·8	11·07	1·28	·67	·60	·71	84
North Sydney	40,970	19·8	9·20	·76	·44	·29	·46	66
Paddington	26,320	65·3	12·20	·72	·53	·34	·38	60
Petersham	24,130	19·2	10·24	·54	·41	·50	·50	57
Randwick	31,380	3·9	8·80	·73	·67	·48	·57	66
Redfern	25,430	58·5	11·76	·94	·87	·47	·63	101
Roekdale	19,500	3·8	9·59	1·38	·56	·41	·46	97
Ryde	8,700	1·2	6·90	1·03	·23	·23	·34	87
St. Peters	10,620	11·9	9·32	·66	·94	·28	·47	86
Strathfield	5,440	3·0	7·72	·18	·18	·37	·37	50
Vaucluse	2,360	3·1	10·17	1·25	...	...	...	71
Waterloo	11,320	14·0	11·84	1·41	1·24	·53	·53	102
Waverley	26,920	13·7	10·03	·67	·52	·41	·52	58
Willoughby	20,130	3·6	8·00	·70	·25	·55	·60	50
Woollahra	20,060	10·4	7·78	·55	·55	·40	·65	50
Shire of Ku-ring-gai	13,670	0·6	7·17	·80	·37	·80	·95	33
Whole Metropolis	755,347	6·4	10·23	·87	·61	·50	·60	72
Auburn	10,430	3·9	13·23	1·82	·77	·96	1·15	60
Bankstown	4,760	·2	5·04	·21	·42	·11	·21	27
Cabramatta and Canley Vale	1,500	·2	9·33	...	1·33	...	·67	82
Dundas	1,530	·6	6·54	·65	...	·65	·65	55
Ermington and Rydalmere	1,760	·9	60·23	4·55	2·27	6·25	7·95	167
Granville	10,720	2·6	8·20	·93	·75	·47	·47	76
Liverpool	3,960	·1	74·24	·76	8·33	1·26	1·26	61
Lidcombe	7,770	1·4	99·36	4·63	·51	15.44	16·47	101
Parramatta	12,630	5·8	17·90	·95	1·35	1·43	1·82	57
Prospect and Sherwood	4,760	·6	7·98	...	·42	1·68	1·68	41
Smithfield and Fairfield	2,910	·2	11·34	·69	·34	·69	·69	66

METEOROLOGY.

The following table, compiled from information supplied by the Sydney Meteorological Bureau, shows that the mean temperature of the air in Sydney during 1915 was 64 degrees Fahrenheit, which is ·9 degrees higher than the mean of 56 years' observation. An examination of the monthly means shows that the mean temperatures were above the average except in the months of April, May, and December. January, February, and March were the warmest months of the year, whilst July was the coldest.

The rainfall for the year was 1·009 inches below the average for 56 years. Only two months, April and December, showed a rainfall above the average.

TABLE 2.

TABLE 2.

Temperature and Rainfall, 1915.

	Temperature in Shade.			Departure of Mean Monthly Temperature from Average of 56 Years. (+ or −)	Rainfall.		
	Max.	Min.	Mean for Month.		Number of Rainy Days.	Amount.	Departure of Amount from Average of 56 Years. (+ or −)
	deg. F.	deg. F.	deg. F.	deg. F.		inches.	inches.
January	80·1	64·7	72·4	+ ·7	8	1·180	—1·263
February	81·6	67·7	74·7	+3·5	12	1·314	—3·148
March	78·6	65·0	71·8	+2·5	10	3·404	—1·873
April	70·3	58·3	64·3	— ·3	17	10·557	+5·212
May	64·2	51·8	58·0	— ·5	9	4·836	—0·221
June	62·3	48·1	55·2	+ ·8	7	1·330	—3·852
July	60·9	46·8	53·9	+1·5	13	5·400	—0·478
August	63·0	48·5	55·8	+ ·8	8	1·236	—1·916
September	70·8	52·6	61·7	+2·7	7	1·436	—1·402
October	72·3	55·6	64·0	+ ·5	7	0·991	—1·817
November	78·8	58·4	68·6	+1·5	5	0·070	—2·747
December	72·9	61·6	67·3	—2·8	16	3·035	+0·396
Means and totals for the year 1915	71·3	56·6	64·0	+ ·9	119	34·789	—1·009

TABLE 3.

TABLE showing cases of Scarlet Fever notified, the number of cases treated in Hospitals, together with the attack-rates from Scarlet Fever per 1,000 of the estimated mean population for the year 1915 :—

District.	Estimated Mean Population.	Cases of Scarlet Fever notified.	Attack-rates of Scarlet Fever per 1,000 living.	Death-rates of Scarlet Fever per 1,000 living.
City of Sydney	107,450	530	4·93	·11
Alexandria	11,520	93	8·07	·08
Annandale	12,550	68	5·42	.....
Ashfield	27,240	115	4·22	·07
Balmain	33.780	156	4·62	·06
Bexley	10,120	53	5·23	·10
Botany	5,660	68	12·01	·35
Burwood	12,260	73	5·95	.....
Canterbury	23,400	247	10·56	·04
Concord	6,150	19	3·09	.....
Darlington	3,920	20	5·10	·51
Drummoyne	13,210	61	4·62	·08
Eastwood	1,360	6	4·41	.....
Enfield	5,410	27	4·99	.....
Erskineville	7,800	67	8·59	.....
Glebe	23,090	110	4·76	·04
Homebush	1,020	1	0·98	
Hunter's Hill	4,389	20	4·56	·23
Hurstville	10,160	86	8·64	·10
Kogarah	12,020	76	6·32	·08
Lane Cove	4,740	40	8·42	.....
Leichhardt	26,708	62	2·32	·11
Manly	13,770	47	3·41	.....
Marrickville	37,200	268	7·20	·08
Mascot	8,380	62	7·40	.....
Mosman	16,900	28	1·66	·06
Newtown	28,190	226	8·02	·04
North Sydney	40,970	164	1·71	·10
Paddington	26,320	104	2·85	.....
Petersham	24,130	129	2·20	.....
Randwick	31,380	154	3·00	·03
Redfern	25,430	206	5·19	·08
Rockdale	19.500	142	3·90	.....
Ryde	8,700	82	3·22	.....
St. Peters	10,620	90	3·95	·09
Strathfield	5,440	12	0·55	.....
Vaucluse	2,360	12	5·08	.....
Waterloo	11,320	130	11·28	·18
Waverley	26.920	113	4·20	·04
Willoughby	20,130	117	5·81	·05
Woollahra	20.060	64	3·19	.....
Ku-ring-gai Shire	13,670	42	3·07	.....
Whole Metropolis	755,347	4,190	5·53	·07
Auburn	10,430	39	3·73	.....
Bankstown	4,760	18	3·80	.....
Cabramatta and Canley Vale	1,500	9	6·00	·67
Dundas	1,530	7	4·58	.....
Ermington and Rydalmere	1,760	2	1·13	.....
Granville	10,730	96	8·94	.....
Liverpool	2,960	37	9·38	.....
Lidcombe	7,770	21	2·70	.....
Parramatta	12,630	96	7·60	·24
Prospect and Sherwood	4,760	57	11·98	.....
Smithfield and Fairfield	2,910	14	4·81	.....

TABLE 4.

NOTIFIED Scarlet Fever in the Metropolis since notification became legal, showing incidence and mortality.

Year.	Cases.	Attack-rate per 1,000 of Population.	Deaths.	Case-fatality per cent.	Death-rate per 1,000 of Population.
1898	2,425	5·37	25	1·03	0·07
1899	556	1·20	10	1·80	0·02
1900	464	0·98	5	1·07	0·01
1901	884	1·82	13	1·41	0·02
1902	1,253	2·54	38	3·03	0·07
1903	2,910	5·77	48	1·65	0·09
1904	1,361	2·40	14	1·03	0·02
1905	1,136	2·15	16	1·41	0·03
1906	1,869	3·44	22	1·17	0·04
1907	976	1·72	11	1·12	0·02
1908	1,153	2·00	20	1·73	0·03
1909	836	1·41	8	0·9	0·01
1910	394	0·65	9	2·28	0·01
1911	369	0·57	3	0·81	0·004
1912	304	0·45	6	1·9	0·008
1913	305	0·79	12	2·16	0·002
1914	1,717	2·32	16	0·9	0·02
1915	4,190	5·53	48	1·14	0·07

Incidence.—Scarlet fever, in common with diphtheria, was markedly prevalent in the Metropolitan area during 1915. The number of cases notified was 4,190, in contrast to 1,717 in 1914. The attack rate was 5·53 per 1,000 of the population, being the highest since the year 1903 (5·77 per 1,000).

The fatality rate, 1·14 per cent., although higher than that of 1914 (0·9 per cent.), was approximately that of the average rate.

The greatest prevalence of the disease was in the months April, May, July, August, November, and December. Scarlet fever was least prevalent during the months of January, February, March, June, and September. With regard to local incidence, the municipalities of Botany and Canterbury were the most affected. One case only was reported from Homebush, and six from Eastwood.

Respecting the incidence in dwellings, 2 persons were attacked in each of 150 houses, 3 in each of 27, 4 in each of 6, and 5 in each of 7 houses. Fourteen cases were notified from the Burwood Salvation Army Home for Children, but the outbreak soon terminated on the removal of the patients to the Coast Hospital. Fifteen cases were reported from St. Ignatius College, Riverview. In the various Metropolitan hospitals, 2 doctors, 20 nurses, and 19 inmates contracted the disease. To some extent the prevalence of the disease was due no doubt to insufficient hospital accommodation for infectious diseases, and the lack of care on the part of householders in providing efficient isolation of patients in their own homes.

Mortality rate for scarlet fever.—The case fatality per cent. during 1915 was 1·14, as compared with that of 0·9 in 1914, indicating possibly a greater virulence in the disease, although it must be borne in mind that the notifications during 1915 exceeded those of 1914 by 2,473.

DIPHTHERIA.

TABLE 5.

TABLE showing cases of Diphtheria notified, the number of cases treated in Hospitals, together with the attack-rates and death-rates from Diphtheria per 1,000 of the estimated mean population, for the year 1914.

District.	Estimated Mean Population.	Cases of Diphtheria notified.	Attack-rates of Diphtheria per 1,000 living.	Death-rates of Diphtheria per 1,000 living.
City of Sydney	107,450	442	4·11	·18
Alexandria	11,520	26	2·26	·17
Annandale	12,550	47	3·75	·80
Ashfield	27,240	23	·84	·04
Balmain	33,780	85	2·52	·24
Bexley	10,120	30	2·96	·20
Botany	5,660	25	4·42	.....
Burwood	12,260	27	2·20	·16
Canterbury	23,400	84	3·59	·26
Concord	6,150	11	1·79	.....
Darlington	3,920	20	5·10	·77
Drummoyne	13,210	20	1·51	.....
Eastwood	1,360	1	·74	.....
Enfield	5,410	12	2·22	.....
Erskineville	7,800	40	5·13	·13
Glebe	23,090	91	3·94	·09
Homebush	1 020	3	2·94	.....
Hunter's Hill	4,389	6	1·37	.....
Hurstville	10,160	54	5·31	·20
Kogarah	12,020	43	3·58	·08

TABLE 5—*continued.*

District.	Estimated Mean Population.	Cases of Diphtheria notified.	Attack-rate of Diphtheria per 1,000 living.	Death-rates of Diphtheria per 1,000 living.
Lane Cove	4,740	13	2·74	.....
Leichhardt	26,708	52	1·95	·26
Manly	13,770	28	2·03	.....
Marrickville	37,200	109	2·93	·08
Mascot	8,330	51	6·09	·36
Mosman	16,900	18	1·07	·06
Newtown	28,190	90	3·19	·11
North Sydney	40,970	70	1·71	·05
Paddington	26,320	75	2·85	·04
Petersham	24,130	53	2·20	·04
Randwick	31,380	94	2·99	·10
Redfern	25,430	132	5·19	·20
Rockdale	19,500	76	3·90	·15
Ryde	8,700	28	3·22	·11
St. Peters	10,620	42	4·00	·19
Strathfield	5,440	3	·55	.....
Vaucluse	2,360	.....	.....	.....
Waterloo	11,320	51	4·50	·27
Waverley	26,920	77	2·86	·11
Willoughby	20,130	55	2·73	·05
Woollahra	20,060	57	2·84	·10
Shire of Ku-ring-gai	13,670	31	2·27	·07
Whole Metropolis	755,347	2,295	3·03	·14
Auburn	10,430	32	3·07	.....
Bankstown	4,760	27	5·67	.....
Cabramatta and Canley Vale	1,500	2	1·33	.....
Dundas	1,530	6	3·92	.....
Ermington and Rydalmere	1,760	.....	.....	.....
Granville	10,730	26	2·42	·09
Liverpool	3,960	13	3·28	·76
Lidcombe	7,770	26	3·35	·13
Parramatta	12,630	38	3·01	·63
Prospect and Sherwood	4,760	11	2·31	.....
Smithfield and Fairfield	2,910	6	2·06	.....

TABLE 6.

NOTIFIED Diphtheria in the Metropolis since notification became legal, showing incidence and mortality in each year.

Year.	Cases.	Attack-rate per 1,000 of Population.	Deaths.	Case Fatality per cent.	Death-rate per 1,000 of Population.
1898	613	1·43	75	12·23	·16
1899	285	·66	14	4·91	·03
1900	278	·63	21	7·55	·05
1901	439	·95	65	14·82	·13
1902	393	·79	37	9·41	·07
1903	690	1·37	73	10·60	·14
1904	738	1·40	45	6·10	·08
1905	695	1·19	42	6·60	·07
1906	659	1·21	32	4·85	·05
1907	659	1·16	46	6·98	·08
1908	880	1·53	38	4·20	·06
1909	1,144	1·93	43	3·70	·07
1910	2,109	3·47	61	2·89	·10
1911	1,834	2·86	58	3.16	·09
1912	2,632	3·92	105	3·9	·15
1913	2,041	2·89	96	4·70	·13
1914	2,011	2·67	95	4·72	·11
1915	2,295	3·03	95	4·13	·14

Incidence.—During the year 1915 diphtheria was prevalent approximately to the same degree as in 1914, and the type of the disease apparently was of about the same virulence.

In the Metropolis proper, 2,295 cases were notified, the attack rate being 3·03 per 1,000 of the population.

The monthly numbers of cases notified were highest in March, April, May, June, July, and December, and lowest in January, February, August, September, October, and November.

No cases were notified from Vaucluse, and the municipalities of Concord, Eastwood, Enfield, Homebush, Hunter's Hill, Lane Cove, Mosman, and Strathfield were but little affected.

The highest attack-rate was in the municipality of Mascot (6·09 per 1,000), with 51 cases; Erskineville, Hurstville, and Redfern had rather heavy attack-rates, 5·13, 5·31, and 5·19 respectively.

Among the extra Metropolitan districts, no cases were reported from Ermington and Rydalmere, whilst Bankstown had the highest rate of 5·67 per 1,000. The

The incidence in dwellings within the Metropolitan area shows that 2 cases occurred in each of 50 houses, 3 cases in each of 30, 4 cases in each of 12, and 5 cases in each of 4 houses.

In the various Metropolitan hospitals, 3 doctors, 13 nurses, and 19 inmates contracted the disease.

Four cases occurred amongst the children attending the Devonshire-street Free Kindergarten in the City, and the school was closed temporarily pending the examination of swabbings from the remainder of the pupils. The spread of diphtheria is chiefly concerned with direct infection from person to person, and occasionally indirectly from person to person through food, principally milk.

The question of the control of diphtheria consists almost entirely in the control of the infective person, who may be either a person definitely ill with the disease or a "carrier." Thus it will be seen that adequate hospital accommodation should be provided for patients, or that home treatment should be satisfactory. The matter of dealing with "carriers" remains still one difficult of solution at the present time.

Mortality.—Out of the 2,295 persons attacked, 95 died, giving a case fatality-rate of 4·13 per cent. The rate in 1914 was 4·72 per cent. The death rate per 1,000 of the population was ·14.

TABLE 7.

TYPHOID FEVER.

TABLE showing cases of Typhoid Fever notified, the number of cases treated in Hospitals, together with the attack rates and death rates from Typhoid Fever per 1,000 of the estimated mean population for the year 1915 :—

District.	Estimated mean population.	Cases of typhoid fever notified.	Attack-rate of typhoid fever per 1,000 living.	Death rate of typhoid fever per 1,000 living.
City of Sydney	107,450	113	1·05	·12
Alexandria	11,520	22	1·91	·43
Annandale	12,550	2	·16	.....
Ashfield	27,240	7	·26	·11
Balmain	33,780	18	·53	·09
Bexley	10,120	3	·30	.....
Botany	5,660	104	18·3	1·06
Burwood	12,260	15	1·22	·08
Canterbury	23,400	28	1·20	·13
Concord	6,150	3	·49	.....
Darlington	3,920	2	·51	·26
Drummoyne	13,210	11	·83	·08
Eastwood	1,360	2	1·47	.....
Enfield	5,410	4	·74	·18
Erskineville	7,800	6	·77	·26
Glebe	23,090	29	1·26	·04
Homebush	1,020	1	·98	.....
Hunter's Hill	4,389	4	·91	.....
Hurstville	10,160	10	·98	.....
Kogarah	12,020	8	·67	.....
Lane Cove	4,740	2	·42	.....
Leichhardt	26,708	25	·94	·11
Manly	13,770	17	1·23	·07
Marrickville	37,200	30	·81	·05
Mascot	8,380	27	3·22	·23
Mosman	16,900	13	·77	.....
Newtown	28,190	20	·71	·21
North Sydney	40,970	16	·39	·05
Paddington	26,320	19	·72	·11
Petersham	24,130	11	·46	·04
Randwick	31,380	36	1·15	·10
Redfern	25,430	41	1·61	·04
Rockdale	19,500	17	·87	·05
Ryde	8,700	.....	.....	.....
St. Peters	10,620	6	·56	·19
Strathfield	5,440	4	·74	.....
Vaucluse	2,360	5	2·12	.....
Waterloo	11,320	23	2·03	·27
Waverley	26,920	8	·30	·07
Willoughby	20,130	10	·50	.....
Woollahra	20,060	4	·20	·05
Shire of Kuring-gai	13,670	20	1·46	·07
Whole Metropolis	755,347	746	·98	·11
Auburn	10,430	2	·19	·38
Bankstown	4,760	2	·42	.....
Cabramatta and Canley Vale	1,500	8	5·33	·67
Dundas	1,530	1	·65	.....
Ermington and Rydalmere	1,760	1	·57	·57
Granville	10,730	6	·56	.....
Liverpool	3,960	9	2·27	·25
Lidcombe	7,770	1	·13	.....
Parramatta	12,630	7	·55	·08
Prospect and Sherwood	4,760	2	·42	.....
Smithfield and Fairfield	2,910	.....	.....	.....

TABLE 8.

NOTIFIED Typhoid Fever in the Metropolis since notification became legal, showing incidence and mortality in each year.

Year.	Cases.	Attack-rate per 1,000 of Population.	Deaths.	Case Fatality per 100 Notified Cases.	Death-rate per 1,000 of Population.
1898	824	1·93	73	8·86	·17
1899	786	1·81	87	11·08	·20
1900	983	2·25	103	10·47	·23
1901	829	1·71	81	9·77	·17
1902	610	1·23	59	9·70	·12
1903	833	1·66	81	9·72	·16
1904	665	1·29	64	9·62	·12
1905	561	1·06	58	10·34	·11
1906	485	·89	60	12·37	·11
1907	505	·89	51	10·09	·09
1908	678	1·17	75	11·06	·13
1909	700	1·18	81	11·50	·14
1910	812	1·33	84	10·34	·13
1911	488	·76	50	10·24	·08
1912	535	·80	53	9·9	·07
1913	566	·81	59	10·42	·09
1914	616	·81	82	13·31	·11
1915	746	·98	74	9·91	·11

Incidence.—746 cases of typhoid fever were notified during the year. The attack rate, ·98 per 1,000, is slightly in excess of that of the previous year (·81 per 1,000).

The largest number of notifications was received in the month of January, and the smallest in June. Among the different Metropolitan municipalities Botany experienced the highest attack rate, 18·3 per 1,000, chiefly due to a dairy outbreak referred to below.

No cases were reported from the municipality of Ryde.

The attack rates were moderately high in the municipalities of Mascot and Waterloo.

It is to be hoped that with the extension of the water sewerage system, now almost complete, to the Botany district and surroundings that there will be a considerable diminution of typhoid fever in these localities.

In the extra Metropolitan districts no cases were reported from Smithfield and Fairfield, but the attack rate in Cabramatta and Canley Vale was 5·33 per 1,000, due to the occurrence of 8 cases in a population of 1,500.

Incidence in dwellings.—Two cases occurred in each of 26 houses, 3 in each of 3, 4 in each of 4, and 5 in one house.

In the various Metropolitan hospitals 1 doctor, 5 nurses, and 2 attendants contracted the disease.

Mortality.—Deaths from typhoid fever totalled 74, giving a death rate of ·11 per 1,000 of the population. The case-fatality per cent., 9·91, was not so high as that of the previous year (13·31 per cent.).

The Acting Secretary of the Water and Sewerage Board has supplied me with the information that the number of houses connected with the sewer during 1915 was 5,019, and that the total number connected at the end of the year was 128,297. The sewerage system was extended in the following districts during the year:—Ashfield, Annandale, Bexley, Burwood, Canterbury, City of Sydney, Concord, Drummoyne, Enfield, Homebush, Hornsby, Kogarah, Leichhardt, Manly, Marrickville, Mosman, Mascot, North Sydney, Newtown, Paddington, Petersham, Rockdale, Randwick, Strathfield, St. Peters, Willoughby, Waverley, Waterloo, and Woollahra.

An extensive outbreak of typhoid fever occurred in the municipality of Botany during the early part of the year. Twelve cases of the disease were notified almost simultaneously, and as the milk supply in each case was similar, suspicion at once was directed to a certain dairy. These premises were visited, and it was ascertained that the business was conducted by a widow (Mrs. D——), and a family of five children, and that about 200 customers were supplied with milk daily. The dairy appeared to be well kept, but at the time of the investigation it was found that Mrs. D——was ill. Her case was diagnosed as one of typhoid fever, and she was removed to the Coast Hospital. Further inquiry elicited the fact that two other members of the family had been previously ill with diarrhœa, but had since recovered. It was ultimately ascertained that one of these two was a "carrier," and had most likely infected both the other members of the household and the milk supply. This "carrier" was also removed from the premises. The dairy was closed and disinfected. A house-to-house visitation of the customers was made by officers of the Department of Public Health, and anti-typhoid inoculation offered, but the response was poor. It was noted by these officers that many of the privies did not comply with the provisions of Ordnance 45 of the Local Government Act.

All of the members of the D——family contracted the disease, except two who had undergone recent anti-typhoid inoculation.

The outbreak before it ultimately ceased was responsible for 78 cases in this municipality, of which 22 were household contacts of other cases. The

The course of this epidemic indicates that in future when an infected dairy threatens to be the cause of a general outbreak of typhoid fever, in addition to the closing of the business, resort to anti-typhoid inoculation of both employees and customers of the dairy would be most beneficial. A stumbling block in this particular outbreak was the refusal of contacts to submit to inoculation.

TUBERCULOSIS.

The number of deaths from all forms of tuberculosis in the Metropolis proper during 1915 was 553, of which 477 were due to tuberculosis of the lungs, 34 to tubercular meningitis, and 42 to other tubercular diseases. These figures do not include 112 deaths from consumption of Metropolitan residents, which occurred in the Waterfall Sanatorium for Consumptives. The total does not include 69 deaths from phthisis which occurred in the Benevolent Asylums, all former Metropolitan residents. When these figures are included the total deaths from phthisis for the year were 658.

The appended table represents as accurately as possible the true number of deaths from phthisis which ought to be debited to the Metropolis proper for each of the past thirteen years.

1903	...	...	589
1904	...	...	550
1905	...	...	495
1906	...	...	498
1907	...	...	512
1908	...	...	504
1909	...	...	458
1910	...	...	495
1911	...	...	541
1912	...	...	494
1913	...	...	621
1914	...	...	601
1915	...	...	658

Notification of Phthisis.

In the City of Sydney itself under the Council's by-laws notification of pulmonary consumption has been in force since 1904 with most beneficial results. A further extension has now been made under the provisions of the Public Health (Amendment) Act, 1915, whereby pulmonary tuberculosis has been made notifiable in the Metropolitan Combined Sanitary Districts and the Hunter River Combined Sanitary Districts.

The regulations dealing therewith were gazetted on 11th August, 1915. Notification is made on a special form direct to the Medical Officer of Health.

Secrecy is observed by the Department with respect to notification. When not otherwise specified by the notifying medical practitioner, the patients are visited by a specially qualified Departmental officer who gives advice as to the precautions to be taken, and notes defects in premises which need to be remedied. On the death or removal of the patient, the local authority is requested to disinfect premises such as the occasion may demand.

Any person who has been notified as suffering from pulmonary tuberculosis, and within a period of twelve months after such notification ceases to occupy premises within the proclaimed area is required to notify the change of address forthwith to the Medical Officer of Health or to the Secretary to the Board of Health.

Provision has also been made for the control of persons employed in the preparation and packing of food for sale, and with respect to guests in hotels or boarding-houses who may be infectious.

Within the Metropolitan Combined Sanitary Districts 284 cases have been notified to the close of the year under the amended Act, including 28 occurring in the City proper. 151 of these cases were visited by Departmental inspectors at the request of medical practitioners. Many of these patients, however, are residents of districts outside the proclaimed area, but were seen and treated by medical practitioners within the Metropolitan districts.

After the death or removal of the patient the previous premises occupied by him or her are disinfected by officers of the local authorities. Under the City Council by-laws 245 cases were notified in the City proper for the whole year, and 172 premises disinfected.

I might point out that in the City proper this disease is notifiable both under the Public Health (Amendment) Act, 1915, and the by-laws of the City Council.

INFANTILE PARALYSIS.

This disease, known also as anterior poliomyelitis, has in recent years been considered a communicable or infectious disease, and was made notifiable in New South Wales from the 1st January, 1912. The probable causation and means of prevention of this complaint has been discussed by Dr. Purdy in his Annual Report for 1913. Infantile paralysis was not so prevalent in the Metropolitan area during 1915 as in 1914, the number

number of cases notified being respectively 48 and 63. The figures for December were, however, high. Of the 48 cases notified, 4 occurred in the extra Metropolitan districts (Auburn 1, Parramatta 1, Warringah Shire 2). The monthly distribution of cases was as follows :—

	1912.	1913.	1914.	1915.		1912.	1913.	1914.	1915.
January ...	1	8	1	1	July... ...	...	...	3	2
February ...	2	5	1	2	August ...	6	2	1	3
March ...	3	6	4	2	September ...	3	1	...	5
April... ...	2	4	17	1	October ...	1	...	1	...
May	5	4	27	1	November ...	2	...	1	8
June... ...	...	2	7	...	December ...	3	...	...	23
					Total ...	28	32	63	48

Of the 48 cases in 1915, 21 were under 1 year of age, 12 were over 1 year and under 2, 4 over 2 and under 3 years, 3 between 3 and 4 years, 6 between 5 and 10 years, 1 between 11 and 15 years, and 1 between 16 and 20 years.

The following table shows the distribution of the cases, indicating that they were sporadic in nature :—

Sydney	6	Mosman	1
Alexandria	1	Newtown...	4
Annandale	1	Paddington	2
Canterbury	2	Petersham	2
Concord	1	Randwick	4
Drummoyne	1	Redfern	1
Erskineville	1	Ryde	3
Glebe	2	Waverley	3
Hurstville	1	Woollahra	3
Kogarah	1	Auburn	1
Leichhardt	1	Parramatta	1
Marrickville	3	Warringah Shire ...	2
		Total	48

MALARIA.

Acute malarial fever was gazetted as a notifiable disease on 17th March, 1915. Notification was the outcome of the return of soldiers to the State who had contracted the disease whilst on service with the New Guinea Expeditionary Force. Although under the circumstances no outbreak of the disease was feared it was felt desirable that some information should be available by means of notification of the number of cases in our midst.

Since the above date 47 cases of the disease were notified to the close of the year in the Metropolitan combined sanitary districts. Of these 47 cases, 6 cases occurred in extra Metropolitan districts (Granville 1, Liverpool 3, Harbour of Port Jackson 2).

The monthly distribution of cases was as follows :—

January		July...	6
February		August	2
March	4	September	4
April	7	October	1
May	2	November	3
June	15	December	3
		Total	47

The following table shows the distribution of cases during 1915 :—

Sydney...	13	Paddington...	9
Alexandria	1	Randwick	3
Balmain	4	St. Peters	1
Erskineville	1	Waverley	2
Marrickville	1	Granville	1
Mosman	1	Liverpool	3
North Sydney... ...	5	Harbour of Port Jackson...	2
		Total	47

Malaria is a mosquito-borne disease, so that measures for its prevention consist for the most part in the adoption of a vigorous anti-mosquito campaign, in addition to adequate treatment of the patient.

EPIDEMIC CEREBRO-SPINAL FEVER.

The above disease (also known as epidemic cerebro-spinal meningitis and meningococcal meningitis) was gazetted as a notifiable disease on 11th October, 1915. Such notification was the outcome of War conditions since an outbreak occurred at the Liverpool Military Camp in July, and the epidemic spread to some extent amongst the civil population.

Twenty-five notifications were received from the above date to the close of the year, viz., October 6, November 10, December 9.

The distribution of these notifications was as follows :—

Sydney...	5	Marrickville	1
Annandale	1	Petersham	1
Balmain	1	Randwick	1
Enfield...	1	Redfern	1
Hunter's Hill	1	Rockdale	1
Kogarah	5	Granville	1
Lane Cove	1	Liverpool	2
Leichhardt	1	Prospect and Sherwood ...	1

Some idea, however, is gained of the more extensive prevalence of the disease prior to notification by the fact that the Government Statistician reports that during the year 81 deaths occurred in the State, of which number 43 were debited to the Metropolis.

Epidemic cerebro-spinal fever is an infectious disease caused by a certain germ whose action affects the membranes of the brain and spinal cord. This germ can also generally be found in the nose and throat of the patient and frequently in the throats of those in contact with him. It happens that many persons may harbour the germ in the throat and yet remain in good health. Such persons, however, may convey the more serious condition to others as occurs in diphtheria and so are called "carriers." The germ probably does not live outside the body for any length of time, so that clothes very likely take but little part in the dissemination of the disease.

The infection from one person to another is probably due to infected particles of sputum or saliva thrown into the air during speaking, coughing, and sneezing, or by kissing, and possibly by using unwashed eating and drinking utensils. The urine of persons suffering from the disease is said also to frequently contain the germ.

Cerebro-spinal meningitis is a complaint of the cold weather and is especially likely to be prevalent where numbers of individuals are closely congregated together as in camps, &c. It has been observed that persons undergoing severe physical exertion are very susceptible to it. Three stages are described with regard to the disease, but sometimes owing to the acuteness and rapidity of the course of the complaint they may be unrecognisable, and death may occur within a day.

In ordinary cases the stages may be :—

1. Reddened and congested throat with a dry cough and husky voice. Redness of the eyes may perhaps be noted.
2. Headache, pains in back and limbs, vomiting, pains in the eyeballs, rise of temperature, and perhaps stiffness of the neck.
3. More serious symptoms may develop, such as intense headache followed by unconsciousness, and frequently there is delirium.

Preventive measures consist in the isolation of the patient and disinfection of his discharges. Contacts should be isolated until it is ascertained whether they are harbouring the germ in the throat or otherwise.

Those in attendance upon patients and carriers should be placed under the best conditions with plenty of fresh air, sunshine, and good food, whilst the nose and throat may be treated with a disinfectant solution.

INFANTILE MORTALITY.

The deaths of children under 1 year of age in the Metropolitan districts during 1915 numbered 1,585 whilst the births totalled 20,871, giving an infantile mortality rate of 72 per 1,000 births. This rate, although not so favourable as those of 1911 and 1914, is yet below the average of the previous five years. Diarrhœal diseases were extremely prevalent in November and December and so affected the year's rate considerably, since the mortality was remarkably low in the other months of the year.

Year.	Deaths of Children under 1 year per 1,000 births.	Year.	Deaths of Children under 1 year per 1,000 births.
1880... ...	192	1898... ...	153
1881... ...	162	1899... ...	120
1882... ...	183	1900... ...	109
1883... ...	163	1901... ...	120
1884... ...	172	1902... ...	119
1885... ...	187	1903... ...	116
1886... ...	173	1904... ...	99
1887... ...	141	1905... ...	88
1888... ...	152	1906... ...	85
1889... ...	172	1907... ...	97
1890... ...	135	1908... ...	83
1891... ...	148	1909... ...	81
1892... ...	130	1910... ...	82
1893... ...	147	1911... ...	71
1894... ...	134	1912... ...	76
1895... ...	131	1913... ...	77
1896... ...	139	1914... ...	68
1897... ...	129	1915... ...	72

TABLE 9.

INFANT mortality in the Metropolis during 1915 from stated causes :—

Measles	29	Diseases of the Stomach ...	3
Whooping Cough	14	Diarrhœa and Enteritis ...	422
Diphtheria	16	Intestinal Obstruction and Hernia...	13
Influenza	1	Other Diseases of Digestive System...	10
Tubercular Meningitis ...	7	Bright's Disease	1
Other Tubercular Diseases	6	Prematurity	417
Cerebro-spinal Fever ...	4	Developmental Diseases ...	302
Meningitis	13	Accident	18
Convulsions...	33	All Other Causes	63
Other Diseases of Nervous System...	64		
Bronchitis	19		
Pneumonia	125	Total	1,585
Other Respiratory Diseases	5		

Under the general heading "Developmental Diseases" are included injury, at birth, debility at birth, atelectasis, congenital defects, atrophy, marasmus, and dentition.

Comparison may be made between the number of deaths under 1 year of age from certain of the causes in the last table with those from the same causes during the five antecedent years :—

TABLE 10.

Causes of Death.	1910.	1911.	1912.	1913.	1914.	1915.
Measles	14	2	32	2	1	29
Whooping-cough	61	42	30	83	34	14
Diphtheria	7	6	8	7	10	16
Diarrhœal Diseases	378	350	523	474	457	422
Tubercular Meningitis	15	6	9	13	9	7
Other Tubercular Diseases	9	2	1	5	7	6
Prematurity	308	298	310	398	360	417
Developmental Diseases	207	250	292	294	370	302
Convulsions	34	30	26	30	48	33
Meningitis	15	24	16	23	17	13
Bronchitis	42	42	37	39	23	19
Pneumonia	94	79	65	83	101	125
Diseases of the Stomach	26	19	17	14	8	3
Intestinal Obstruction	10	12	7	13	12	13
All other causes	108	105	118	114	82	63
Totals	1,328	1,267	1,491	1,592	1,539	1,585

This table shows that the number of deaths from measles was the highest since 1912. A decrease in the number of deaths from whooping cough occurred. Diarrhœal diseases again show a decrease, being 35 less than during the previous year.

If reference is made to Table 1, a comparison may be made of the infantile mortality rate in the various districts of the Metropolitan area. It appears from that table that the most unfavourable rates were experienced in Alexandria, Eastwood, Homebush, Mascot, Redfern, and Waterloo. Of the extra Metropolitan districts Ermington and Rydalmere and Lidcombe showed the highest rates.

It must be borne in mind, however, that the comparison of these rates is not altogether fair since births are not distributed to the various districts in a similar manner to the deaths. Moreover, these figures are vitiated to some extent by the existence of private hospitals, children's homes, &c., in various municipalities.

BABY CLINICS.

The visiting of infants in the Metropolis, previously undertaken by Miss Blomfield, of the City Council staff, and by Mrs. Day and Miss Burne, of the Department of Public Health, and of which records have hitherto appeared in these annual reports, was discontinued at the beginning of the year owing to the establishment of Baby Clinics by the Minister of Health under the control of a special Board. The Baby Clinics, Pre-Maternity, and Home Nursing Board also absorbed the Rawson School for Mothers, which previously undertook work of a similar nature. Clinics have been established at Alexandria, Balmain, Darlinghurst, Glebe, Mascot, Newtown, North Sydney, and St. Peters, and it is intended that the work of extension shall proceed to other suburbs.

At these Clinics nursing mothers are given instructions as to the care of themselves and their infants, whilst the Clinic nurses also visit the mothers in their own homes. Daily lists of births are obtained from District Registrars of Births, Deaths, and Marriages. Early notification of births is now also compulsory under the Notification of Births Act, 1915. Up till April when these duties were discontinued, Miss Blomfield, the City Nurse Inspector, had paid 313 visits to mothers.

Miss Blomfield during the year also investigated 32 cases of infantile gastro-enteritis.

NOTES

NOTES ON THE SANITARY WORK OF THE YEAR.

One hundred and eighty-six dwellings were inspected and ascertained to be in an insanitary condition. Under the Public Health (Amendment) Act, 1915, section 16, the procedure for securing a closing order on premises has been now much simplified.

During the year inspections were made and reports submitted to the following local authorities recommending them to take action in connection with 71 premises in accordance with the provisions of section 16 of the Public Health (Amendment) Act, 1915, viz. :—

Ashfield	1	Manly	1
Balmain	2	Newtown	2
Botany	4	Paddington	7
Canterbury	3	Randwick	3
Glebe	12	Redfern	2
Granville...	13	Ryde	1
Kogarah	1	Strathfield	3
Lane Cove	2	Waterloo...	10
Lidcombe	1	Waverley	3

The suburban garbage tips were inspected in the early part of the year with the result that a very unsatisfactory condition of affairs was disclosed, more especially in thickly populated localities.

I expressed the opinion that at least the more densely populated municipalities should adopt some modern method of garbage disposal without delay (Annandale, Balmain, Leichhardt, Manly, North Sydney, and Petersham being already so provided, whilst the garbage from Glebe is punted to sea). It seemed to me also that possibly neighbouring municipalities might erect and use destructors conjointly where financial conditions otherwise would appear to be a hindrance.

As a result of this general inspection the local authorities were notified in July by the Board of Health that at the expiration of six months consideration would be given as to what steps would be taken to compel the installation of garbage destructors unless action were taken in the meantime to deal with garbage in a satisfactory manner.

Drainage troubles were investigated in 120 instances. Nuisances arising from 17 stables, 2 public privies, and 8 septic tanks were dealt with in the suburbs.

Fifty-seven plans for septic tanks were dealt with and the sites of same inspected by Mr. Kenway of my staff.

Sites have been inspected, plans examined, and reports furnished to the following local authorities in connection with applications made for private septic tank installations :—Dundas 2, Eastwood 1, Hunter's Hill 2, Kuring-gai Shire 23, Randwick 1, Vaucluse 4, and Woollahra 6. Of this number, 16 of the plans or sites were found unsuitable, some of which, however, after certain amendments made in the plans, were approved of.

In this connection, I wish to point out that much delay is caused by the various applicants for septic tank installation neglecting to comply with the provisions of Local Government Ordnance 45, section 26, which provides that a complete plan and specification of the proposed works and a block plan to scale of the premises and the adjoining ways or places on which the proposed position of the septic tank should be accurately shown, and a statement of the way in which it is proposed to dispose of the effluent water from the septic tank.

Five investigations were made with respect to outbreaks of infectious diseases.

Five reports were made in connection with the collection and disposal of night soil at Epping, Mascot, Randwick, Bankstown, and Prospect and Sherwood. Miscellaneous investigations and inspections totalled 71, *e.g.*, collections of rubbish, rat infestation, poultry nuisances, defective water supply, &c.

As a result of personal observation I am strongly of opinion that some legal provision should be made for dealing adequately with the matter of adequate water supply for premises, and the proximity of stables and poultry enclosures to dwellings.

My staff remains the same as during the year 1914. The Health and Sanitary Department of the City Council is still under the able supervision of Mr. Lloyd and Mr. Bros, whilst my own departmental officers, Messrs. Kenway and Roberts, have performed their onerous duties consistently and well during the year. The work has been heavy owing to the widespread epidemics of infectious diseases and the gazettal of the new notifiable diseases. Letters registered at the office of the Medical Officer of Health totalled 960, and 560 were despatched. Telephone complaints approximately numbered 312. All verbal complaints are duly entered in a book for purposes of record and for any action deemed necessary. The work of investigation of cases of phthisis notified for visitation has been ably and tactfully performed by Miss Burne, and subsequently by Mrs. Day, in the suburbs, and by Miss Blomfield in the city proper.

A report on the health of the metropolis is issued monthly, and I am much indebted to the Government Statistician and his staff for their co-operation in recording vital statistics in connection therewith, and also for their assistance in the compilation of tables of vital statistics for this my annual report.

PUBLIC HEALTH ADVANCEMENT.

A most important administrative measure has been afforded us in the new Public Health (Amendment) Act, 1915. It is an Act to further regulate sanitation, and to prevent the spread of tuberculosis, smallpox, plague, cholera, and other diseases, and to apply the provisions of Acts relating to Public Health and Pure Food enacted by or under other Acts to the Crown and certain public departments.

As previously indicated, pulmonary tuberculosis is now a notifiable disease in the Metropolitan and Hunter River combined sanitary districts.

Licensed premises are now under direct supervision with respect to sanitation by the Board of Health. The procedure of enabling the local authority to apply a closing order to insanitary dwellings has been much simplified by the provisions of the amended Act.

State convalescent homes at Ryde and Rose Bay respectively for men and women have been provided, together with a hospital for babies at Vaucluse.

Extensive additions have been made to the Coast Hospital, a long felt necessity, so that adequate accommodation might be provided for dealing with cases of infectious disease. The welfare of infants and mothers has been duly considered by the Government in the establishment of Baby Clinics. The question of dealing adequately with venereal disease is becoming urgent, and it is expected that the extension of clinics similar to that in existence at the Royal Prince Alfred Hospital will be made in the near future, and other methods of prevention and relief afforded.

TABLE 11.

SHOWING Legal Proceedings taken by Local Authorities in respect of matters affecting the Public Health during the year 1915.

Municipality.	Public Health.	Dairies Supervision.	Noxious Trades.	Pure Food Act.	Police Offences.	Cattle Slaughtering, Diseased Animals, and Meat.	Local Government Ordinances.	Convictions.	Dismissals.	Withdrawn.	Totals.
Alexandria	.....	.....	1	.....	1	.....	24	19	1	6	26
*Annandale	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Ashfield	2	.....	.....	.....	.....	.....	3	4	1	.....	5
Balmain	4	.....	.....	.....	2	.....	6	12	.....	1	13
Bexley	.....	.....	.....	.....	.....	.....	1	1	.....	.....	1
Botany	.....	.....	.....	.....	.....	.....	1	1	.....	.....	1
Burwood	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Canterbury	.....	1	.....	1	.....	.....	.....	2	.....	.....	2
Concord	1	.....	.....	.....	.....	.....	.....	1	.....	.....	1
*Darlingotn	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Drummoyne	.....	2	3	.....	.....	.....	44	49	.....	.....	49
Eastwood	.....	.....	.....	.....	9	.....	.....	8	1	.....	9
*Enfield	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Erskineville	.....	.....	.....	1	.....	.....	1	2	.....	.....	2
Glebe	.....	1	.....	9	.....	.....	10	20	.....	.....	20
*Homebush	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
*Hunter's Hill	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
*Hurstville	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Kogarah	.....	.....	.....	.....	2	.....	3	5	.....	.....	5
Lane Cove	1	.....	.....	.....	.....	.....	1	1	1	.....	2
Leichhardt	6	.....	.....	.....	.....	.....	6	.....	.....	.....	6
Manly	1	.....	.....	.....	.....	.....	.....	1	.....	.....	1
*Marrickville	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mascot	.....	.....	.....	.....	.....	.....	3	3	.....	.....	3
Mosman	.....	.....	.....	.....	.....	.....	5	5	.....	.....	5
*Newtown	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
North Sydney	27	.....	.....	.....	.....	.....	2	16	.....	11	27
Paddington	4	.....	.....	2	.....	.....	2	8	.....	.....	8
Petersham	.....	.....	.....	1	.....	.....	.....	1	.....	.....	1
Randwick	.....	.....	.....	.....	.....	.....	3	3	.....	.....	3
Redfern	.....	1	1	.....	.....	.....	.....	2	.....	.....	2
*Rockdale	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
*Ryde	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
*St. Peters	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
*Strathfield	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
*Vaucluse	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Waterloo	3	.....	.....	.....	.....	.....	22	25	.....	.....	25
Waverley	25	.....	.....	.....	.....	.....	2	27	.....	.....	27
Willoughby	4	.....	2	.....	.....	.....	4	9	1	.....	10
Woollahra	2	.....	.....	.....	.....	.....	3	4	.....	1	5
*Auburn	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Bankstown	.....	.....	.....	.....	2	.....	10	6	3	3	12
*Dundas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
*Ermington	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Granville	.....	.....	.....	.....	.....	.....	41	41	.....	.....	41
*Lidcombe	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
*Liverpool	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Parramatta	1	.....	.....	1	.....	.....	1	3	.....	.....	3
*Prospect	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
*Smithfield	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Shires.											
*Hornsby	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
*Kuring-gai	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
*Warringah	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

* No prosecutions during the year.

Table 12.

Sanitary Officers.

The following list shows the names and qualifications of the Sanitary Officers of the several municipalities in the Metropolitan Combined Districts:—

Municipality.	Estimated mean Population, 1915.	Sanitary Inspectors
City of Sydney	107,450	Chief Inspector, B. Lloyd, Cert. R.S.I.; J. D. Smith, Cert. R.S.I.; W. E. Gundry, Cert. R.S.I.; W. D. McNeil, Cert. R.S.I.; J. W. Martin, Cert R.S.I.; F. Letchford, Cert. R.S.I.; F. A. Cuddy, Cert. R.S.I.; O. Vincent. Cert. R.S.I.; E. A. Dowling, Cert. R.S.I.; A. H. Judd, Cert. R.S.I.; E. S. Furness, Cert. R.S.I.*; A. Cook, Cert. R.S.I.; A. S. Webb, Cert. R.S.I.; W. O. Vogwell, Cert. R.S.I.*; Miss Isla Bloomfield, Cert. R.S.I.; A. B. Norton, Cert. R.S.I.; George Cornwell, James Brady, Meat Inspectors Certificate, Sydney Technical College.
Alexandria	11,520	H. S. Doig, Cert. R.S.I.
Annandale	12,550	A. S. Campbell.
Ashfield	27,240	Charles Van Treight, Cert. R.S.I.
Balmain	33,780	F. J. Paris, Cert. R.S.I.; and A. Sinfield, Cert. R.S.I.
Bexley	10,120	W. J. Devene, Cert. R.S.I....
Botany	5,660	J. Ellis, Cert. R.S.I.
Burwood	12,260	J. J. Wright, Cert. R.S.I.
Canterbury	23,400	A. M. Judd, Cert. R.S.I.
Concord	6,150	F. Hildred, Cert. R.S.I.
Darlington	3,920	A. P. Gibson combines duties of Town Clerk and Inspector.
Drummoyne	13,210	H. V. Stewart, Cert. R.S.I.
Eastwood	1,360	S. G. Small combines duties of Town Clerk and Inspector.
Enfield	5,410	—. Cottrell, Cert. R.S.I.
Erskineville	7,800	R. Bell, Cert. R.S.I.
Glebe	23,090	W. P. Young, Cert. R.S.I.; and W. P. Massey.
Homebush	1,020	G. Bressington.
Hunter's Hill	5,600	W. C. Wise, Town Clerk and Inspector; J. J. Petre, Assistant Inspector.
Hurstville	10,160	—. Allsop, Cert. R.S.I.
Kogarah	12,020	P. Bailey, Cert. R.S.I.
Lane Cove	4,740	G. T. Long, Cert. R.S.I.
Leichhardt	27,900	A. Pritchard, Cert. R.S.I.
Manly	13,770	L. S. Crakenthorpe, Cert. R.S.I.
Marrickville	37,200	P. H. McNeice, Cert. R.S.I.
Mascot	8,380	G. M. Shaw, Cert. R.S.I. .
Mosman	16,900	J. L. Walters, Cert. R.S.I.
Newtown	28,190	J. Watson, Cert. R.S.I.
North Sydney	40,970	C. T. Trickett, R. C. Nankervis, Cert. R.S.I.; and D. Tate, Cert. R.S.I.
Paddington	26,320	A. D. Carmichael, Cert. R.S.I.; and J. Miller, Cert. R.S.I.
Petersham	24,130	J. E. Doswell, Cert. R.S.I.
Randwick	31,380	J. A. Wauchope, Cert. R.S.I.; and P. H. Macky, Cert. R.S.I.
Redfern	25,430	J. Forgie, Cert. R.S.I.
Rockdale	19,500	J. V. Tyrell, Cert. R.S.I.
Ryde	8,700	J. W. Ainsworth.
St. Peters	10,620	F. Fitzpatrick, Cert. R.S.I.
Strathfield	5,440	J. S. Cater, Cert. R.S.I.
Vaucluse	2,360	J. A. O'Connor, Cert. R.S.I.
Waterloo	11,320	J. W. Henning, Cert. R.S.I.
Waverley	26,920	A. W. Gibbs, Cert. R.S.I.
Willoughby	20,130	J. Naylor.
Woollahra	20,050	H. J. Robinson.
Kuring-gai Shire	13,670	J. Ward.

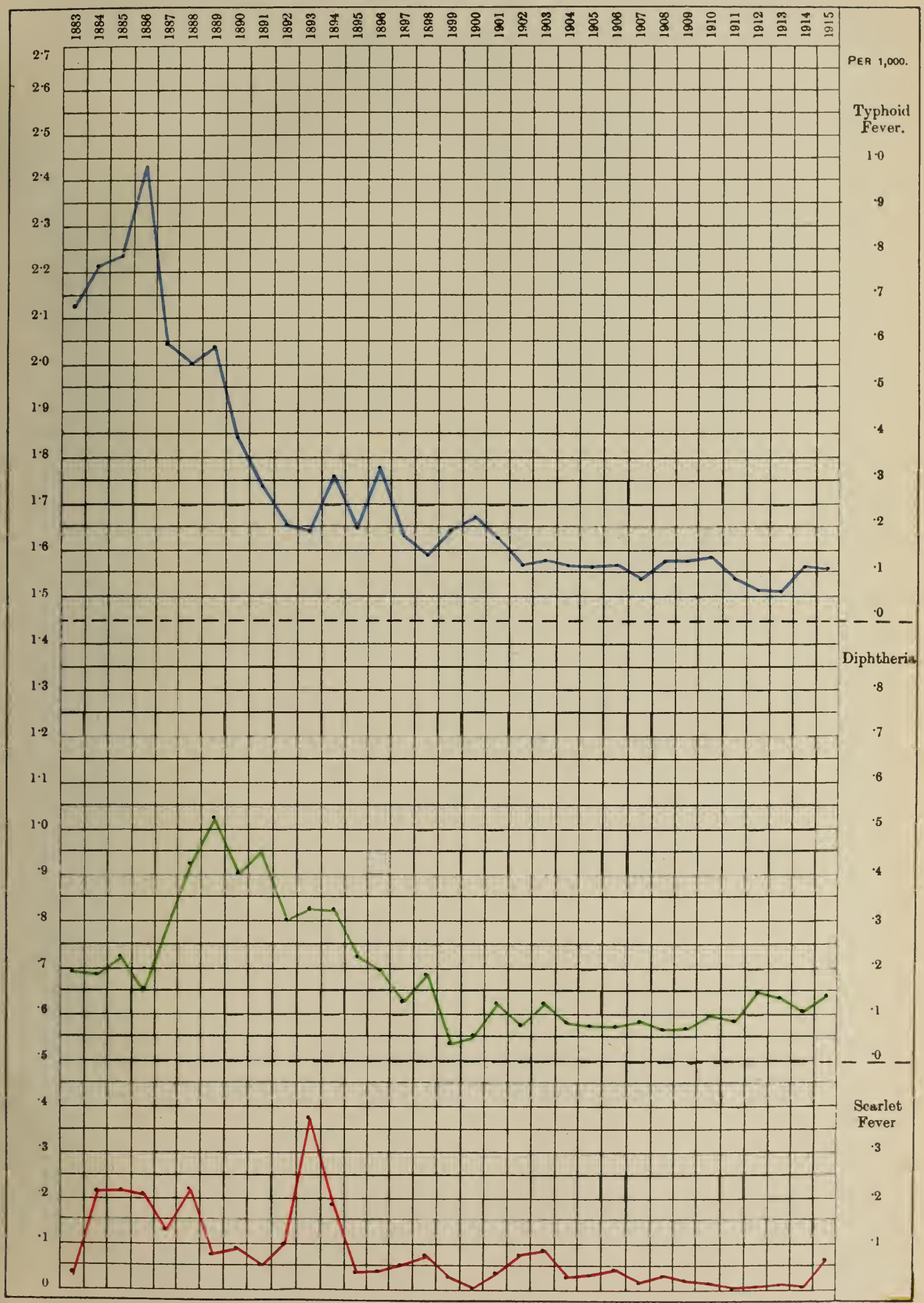
Note.—The letters "Cert. R.S.I." after an officer's name indicates the possession of the Certificate of the Royal Sanitary Institute.

* Messrs. E. S. Furniss and W. O. Vogwell hold also the Certificate of Competency of the Sydney Technical College for a Sanitary Inspector.

Extra Metropolitan Municipalities

Municipality.	Population.	Sanitary Inspector.
Auburn	7,530	A. E. Williams, Cert. R.S.I.
Bankstown	3,310	E. E. Thompson.
Cabramatta and Canley Vale	1,270	W. H. Johnson, Town Clerk and Inspector.
Dundas	1,230	T. Carson, Town Clerk and Inspector.
Ermington and Rydalmere	1,760	T. Feather, Town Clerk and Inspector.
Granville	9,030	W. P. Upcroft, Cert. R.S.I.
Lidcombe	5,640	C. Cook.
Liverpool	3,960	A. McFarlane.
Parramatta	12,650	C. W. Bardsley, Cert. R.S.I.
Prospect and Sherwood	4,110	H. R. Stoney, Cert. R.S.I.
Smithfield and Fairfield	2,410	R. H. Dummett, Town Clerk and Inspector.
Hornsby Shire	.....	J. Oner, Cert. R.S.I.
Warringah Shire	.....	E. Starr, Cert. Sydney Technical College.

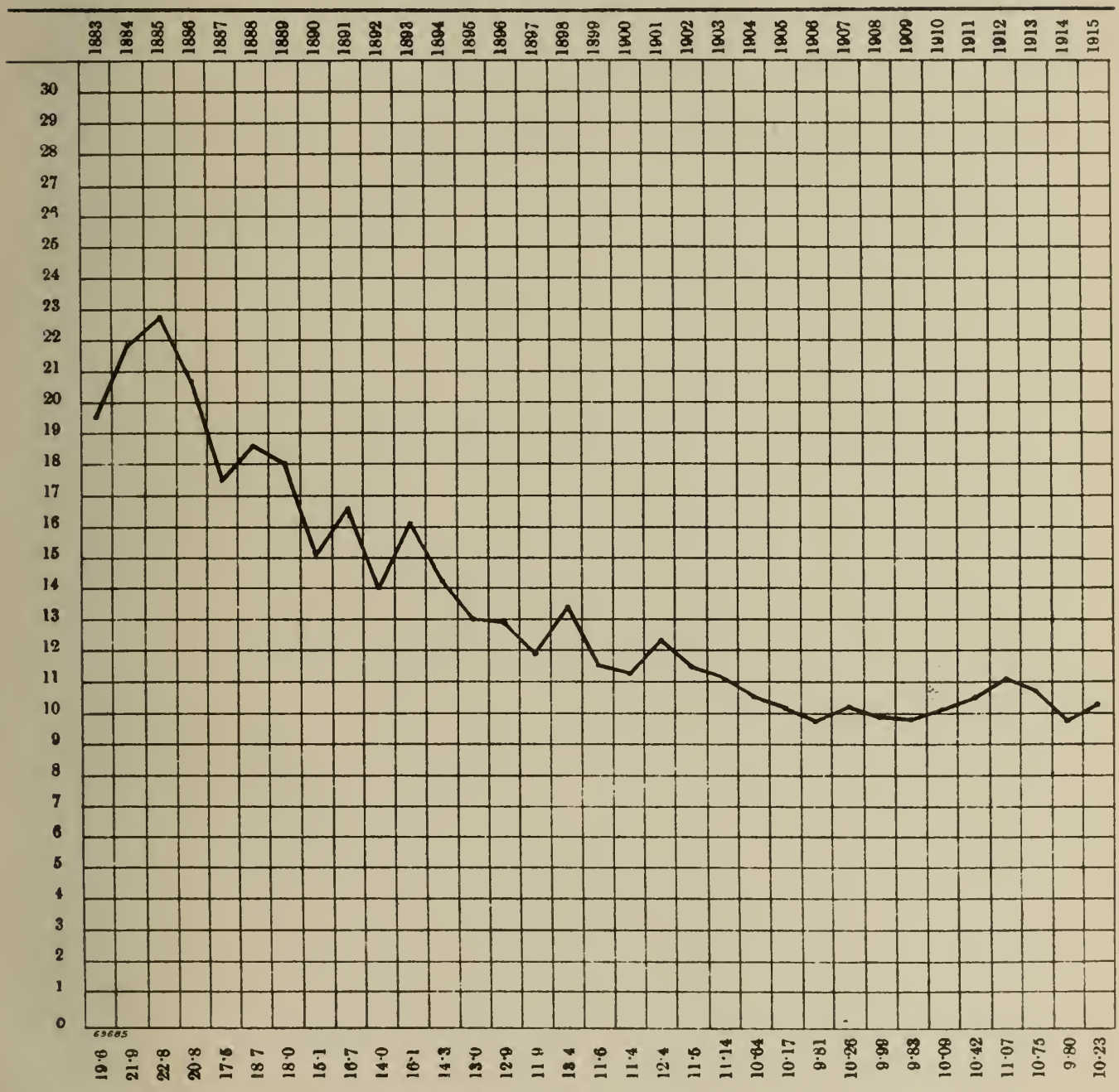
Diagram showing the Annual Death-rates in the Metropolis per 1,000 living from Typhoid Fever, Diphtheria, and Scarlet Fever for the Years 1883-1915 inclusive.



Note.—Since 1898 the necessary correction has been made for the deaths of non-residents occurring in Metropolitan Hospitals.

SUNY
E
A

DIAGRAM showing ANNUAL GENERAL DEATH-RATE from all causes per 1,000 living in the Metropolis for the Years 1883–1915 inclusive.



NOTE.—Since 1898 the necessary correction has been made for the deaths of non-residents occurring in Metropolitan Hospitals.

LIBRARY
OF THE
UNIVERSITY OF

Table 13.

Table showing Deaths in the Municipalities of the Metropolitan Combined Districts during the year 1915, classified according to Diseases, Ages, and Localities. All Deaths which occurred in General Hospitals are distributed to their proper districts. Deaths of persons residing on the Shipping and Islands in the Harbour of Port Jackson are not included, nor those of persons in Benevolent Asylums (all of which are outside the boundaries of the Metropolis). Deaths in the Waterfall Hospital for Consumptives and Hospitals for the Insane of Metropolitan residents are included in this Table.

| Causes of Death. | Age-periods—Metropolis. | | | | | | | | | | | In Sub-districts of Metropolis at all Ages. | | | | | | | | | | |

2.—Hunter River Combined Sanitary District.

Staff.

J. Booth-Clarkson, L.R.C.P. and S. (Edin.), D.P.H. and D.T.M.H. (Camb.), Acting Medical Officer of Health, Hunter River Combined Sanitary Districts.

Senior Sanitary Inspector	George H. Godfrey.
Nurse-Inspector	Mary E. Fletcher.
Clerk	Doris L. Bate.

REPORT OF THE ACTING MEDICAL OFFICER OF HEALTH FOR THE YEAR 1915.

James Booth-Clarkson, L.R.C.P. and L.R.C.S. (Edin.), D.H.P. (Camb.), D.T.M.H. (Camb.), T.

Public Health Department, Newcastle,
5th July, 1916.

I have the honour to submit the following report of the work in the above District during the year 1915 :—

Description.—The Hunter River Combined Sanitary District consists of seventeen Municipalities (Plattsburg and Wallsend now being the Municipality of Wallsend) and five Shires, and of a Police Area for Dairy Inspection purposes.

The population of the whole district at the end of 1915 was estimated at 133,200. The area is over 3,000 square miles. The distances from Newcastle vary up to 70 miles; and on occasions the officials of this Office are liable to be sent out of the district.

General.—Dr. Dick proceeded to Europe early in May, 1914, and arrived in England just before the European War of 1914 broke out. On this occurring he was appointed on the Staff of the Lady Dudley Australian Voluntary Hospital, and proceeded with it to France, being appointed temporarily a Major in the Royal Army Medical Corps. After various experiences that hospital was, somewhat early in the war, established at Wimeraux, near Boulogne, in France, and it remains there up to the present date.

I have continued the duties of Acting Medical Officer from 6th May, 1914, having previously to that been Medical Inspector for Northern Queensland. Before this, I had held various Public Health appointments in Natal (South Africa); and also during the Spanish-American War, Boer War, and Natal Native Rebellion of 1906.

While Medical Inspector of Northern Queensland I also acted for a time as Commissioner of Public Health and Chief Quarantine Officer, Queensland.

Administration.

Staff.—The staff, which is rather small for a district of such a size and population, consists of the Medical Officer of Health, a Senior Sanitary Inspector—who is also an Inspector under the Pure Food Act—three Slaughtering Inspectors, a Nurse Inspector, and a Temporary Clerk.

In addition, each municipality (of which there are seventeen) and each shire (of which there are five) have their own Sanitary Inspectors, some of whom hold a certificate from the Royal Sanitary Institute, London; but a good many, in addition to their office as Sanitary Inspector, are also Town Clerks, Clerks of Works, Working Foremen, &c. Table A shows the names and qualifications of the above-mentioned sanitary officers, and the additional offices held by some of them.

TABLE A.

LIST of State and other Sanitary Officers of the Hunter River Combined Sanitary District and their qualifications.

District.	Population.	Name.	Qualifications.
State.			
Hunter River Combined District.	.....	Dick, Robert	M.B., C.M. (Syd.). D.P.H. (Camb.), M.O.H. (on Active Service).
,, ,, ...	.....	Booth-Clarkson, J.	L.R.C.P. and L.R.C.S. (Edin.), D.P.H. and D.T.M.H. (Camb.), Acting M.O.H.
,, ,, ...	.....	Godfrey, George H.	Assoc. Roy. San. Inst. (Lond,).
,, ,, ...	.....	Jurd, M. R.	Cert. R.S.I. and Syd. T. Col.
,, ,, ...	.....	Bell, Richard	,, ,, ,,
,, ,, ...	.....	Abberton, John	Cert. R.S.I. (Lond.).
,, ,, ...	.....	Fletcher, M. E.	Cert. R.S.I. (Lond.),Trained Nurse.
Municipal.			
Adamstown	2,800	Brown, Wm.	Also Town Clerk.
Carrington.....	2,600	Lawson, J. L.	Also Town Clerk.
Greta	1,100	North, M.	Also Town Clerk.
Hamilton	8,950	Beynon, R. J.	Cert. R.S.I. (Lond.).
Lambton	2,700	Noble, H.	Also Town Clerk.
Maitland, East	3,250	Sarginson, W.	
Maitland, West	8,600	Reay, A.	Cert. R.S.I. (Lond.).
Merewether.....	4,350	Allinson, W.	
Newcastle.....	13,100	Lloyd, Thos.	Assoc. R.S.I. (Lond.).
New Lambton	1,850	Reynolds —.	Also Town Clerk.
Raymond Terrace.....	900	Adam, A. L.....	Also Town Clerk.
Singleton	3,000	Collins, W.	Cert. R.S.I. (Lond.).
Stockton	2,200	Johnson, W.....	Cert. R.S.I. (Lond.).
Wallsend	5,850	Cunningham, W.....	Assoc. R.S.I. (Lond.).
Waratah.....	5,100	Wrightson, T.	Cert. R.S.I. (Lond.).
Wickham	9,250	Fleming, P.	
Shires.			
Bolwarra	3,250	Wynne, J.	Also Shire Clerk.
Cessnock	25,500	Springbett, W.....	Cert. R.S.I. (Lond.).
Lake Macquarie	16,800	Bolton, J. O.....	Cert. R.S.I. (Lond.).
Port Stephens	4,100	Davoren, T.	Also Shire Engineer.
Tarro	6,900	Branch, Ed.	

Inspector George H. Godfrey, and Nurse Inspector Fletcher are the only State Sanitary Inspectors attached to the staff of the Medical Officer of Health, and consequently their duties are very diverse. Inspector Godfrey is an able, energetic, and tactful officer. He has to make sanitary inspections (dairies thirty-seven, slaughter-houses seventy-two, fat-extractors sixty-six, pig-keepers sixty-nine, rag-pickers one); he is also the Inspector under Pure Food Act (taking samples of milk and other foods). He has frequently to act as disinfector, and sometimes that work carries him considerably outside of his own district (to Gloucester, &c.). He also conducts prosecutions in the various police courts all over his district.

Slaughtering Inspectors Jurd, Bell, and Abberton are employed as Meat Inspectors within the Abattoir Area. For convenience of inspection the available slaughter-houses are divided into three groups:—In one, which is called the Kahibah Group, there are five premises, each doing a fairly large amount of killing; in the next, called the Sandgate Group, there are six premises; in the next, called the Waratah Group, there are four premises.

Nurse-Inspector Fletcher, who holds the certificate of the Royal Sanitary Institute of London, has done valuable work in the district, and more especially during the last year in connection with the smallpox outbreak, in visiting contacts, attending vaccination depôts, acting as Matron for a time both in the Kurri Kurri Isolation Wards and at the Isolation Hospital of the H.R.D., formerly called the Stockton Isolation Hospital.

Miss Doris Bate has acted as temporary clerk since February of the present year, having been reappointed during that month. Her work has been valuable, and in view of the large amount of correspondence and reports, it is difficult to see how the work of this office has been carried on so long without a clerical official. In addition to clerical work, Miss Bate also rendered very useful assistance in vaccination both in the Office and at outlying depôts.

With regard to the routine of clerical work of the Hunter River Combined Sanitary District the following method is pursued.

Up to January of the present year registers of infectious diseases were kept, but from the 1st January a card system was inaugurated which displaced the very cumbersome register-books.

On the receipt of notifications of infectious diseases from the Local Authorities (Town and Shire Clerks), they are stamped with the date of receipt and the particular disease.

All

All details, after being endorsed as correct in regard to their respective districts and entered on their respective cards, are then forwarded to the Secretary, Department of Public Health, Sydney.

Special report sheets are kept to show the incidence of infectious diseases in each Municipality or Shire monthly, and also for daily reference so that the cause of any undue number may be inquired into and investigated.

A record is kept of the milk supplies of infected households, a special note being made of infectious diseases occurring on dairy premises or milk vendors' premises to facilitate prompt action.

Special note is also made of any infectious disease outbreak in any of the institutions or hospitals in the district.

I reported, in 1914, that great difficulty was experienced in obtaining the Vital Statistics for this district, as up to the end of that year the District Registrars had not complied with the Public Health Act, Part 2, section 21, paragraph 2. During 1915 forms have been supplied them for monthly returns of deaths, &c., and there has been considerable improvement in the matter, and, in addition the Government Statistician, New South Wales, is kindly supplying quarterly returns of deaths.

Bacteriological Laboratory.—There is a bacteriological laboratory in connection with the Health Office, in which a considerable amount of work was done during 1914, but not nearly so much during the present year, owing to the main efforts of the staff of this office having to be devoted to eradicating smallpox.

Practitioners were, however, on request, provided with sterile throat swabs, Widal tubes, and other requisitions.

Public Health Work carried out during the Year.

Owing to the serious outbreak of smallpox which, after being absent for some time, reappeared in January, 1915, and in which there were 400 cases, general public health matters had occasionally to take a somewhat secondary place, as the whole staff had to devote their entire attention to eradicating the disease.

During the year, however, the following work, omitting many minor items, was carried out :—

Buildings.—Buildings were inspected in various parts of the district with a view to their improvement or demolition, as follows :—West Maitland, Waratah, and Wickham.

Owing to the staff being fully occupied with the smallpox outbreak and to certain Sanitary Inspectors being able to deal with insanitary buildings by P.H.A.A., section 16, the Councils were encouraged to do as much of this work as possible.

Up to the present time a great many items of this character have been referred to the staff of this office when they should have been dealt with by the Municipal and Shire Councils themselves.

This has frequently led to this office being left without anybody in it to deal with the numerous inquiries on public health and other subjects owing to officials being called on to deal with really minor sanitary matters.

Now that the latter are being dealt with more by the Councils these numerous inquirers will be able to receive more satisfactory and particular attention.

Garbage Depôts.—Garbage depôts were inspected at Merewether, West Maitland, Newcastle, and Wickham.

Unhealthy Building Sites.—Areas of land in various parts of Wickham and Hamilton were inspected and reinspected with a view of having them proclaimed.

Nuisances and Miscellaneous Complaints.—These were inquired into in various parts of the District, particularly at Wickham, Port Waratah, Weston, Kurri Kurri, Singleton, Lambton, West Maitland, Hamilton, and Newcastle. These varied from numerous minor complaints to nuisances under the Public Health Act.

Hospitals.—All the hospitals in the district were visited once or more frequently during the year, either with a view of inspecting suspicious cases or in regard to the condition of the vaccination of the staffs. A considerable number of private hospitals and nursing homes were seen or communicated with on the same subject. At the present time all the hospital staffs are satisfactorily vaccinated, and many of the managers and their assistants of private hospitals and nursing homes.

Disinfection.—In cases of scarlet fever, diphtheria, and typhoid fever, after the removal or convalescence of the patient, the Local Authorities' Inspector is expected to visit and disinfect the house and effects by formalin-spraying or other approved methods, when matters are carried out according to regulation.

There

There is no doubt, however, that in many cases, and in most of those of scarlet fever, the householders do the disinfecting with sulphur, and in my experience when disinfecting is left to the householder it means no real disinfecting at all, especially if sulphur is used.

Probably most of the disinfecting after typhoid fever is carried out by the local Sanitary Inspector, as a special "Investigation of Typhoid Fever form" has to be filled up in these cases.

Several hospitals and many houses where cases of smallpox had been treated or from which such cases had been removed were disinfected in this district and in some cases out of it (Gloucester, Bullahdelah) by Sanitary Inspector G. H. Godfrey, of this Department, who disinfected houses in all cases excepting where a qualified Sanitary Inspector to a Council, having a suitable plant, understood the work and carried it out.

Some of the Councils issue disinfectants free, but the way in which such free disinfectants are generally used lulls people into a sense of false security.

Police Courts.—Police Courts were attended on two occasions in order to give evidence.

Examinations.—During the year the following were examined for various causes—

(*a*) Public Service candidates, 21.

(*b*) Pilots, 14.

(*c*) Miners' Accident Relief Fund, 85. As a great many of the above were unable to come to this Office to be examined and had to be visited at different places all over the district when the outbreak of smallpox was at its worst, this particular work was of a very arduous nature.

(*d*) Miscellaneous, 4.

Variola.—The smallpox outbreak was very extended and caused 400 cases during 1915. It practically occurred throughout the district, and every place where it did occur required frequent visits. Not only was the whole staff of this office engaged in dealing with the complaint, but very valuable assistance was given at different times by the following officers from the Public Health Department, Sydney, which assistance was highly valued, as there were times when it was very strenuously required :—

(*a*) The Director-General of Public Health.

(*b*) Dr. W. G. Armstrong, Senior Medical Officer of Health.

(*c*) Dr. A. T. Chapple, Assistant Medical Officer.

(*d*) Chief Sanitary Inspector Cresswick, Public Health Department.

(*e*) Inspector Jackson, Public Health Department.

The latter was attached to my staff for smallpox work during a great part of the time that I was resident in Kurri-Kurri and District. He did valuable work in regard to investigation of cases, disinfection, &c.

Military Camps.—The Military Officers of the camp near Newcastle were given every assistance on request in regard to small-pox cases, supply of vaccine, &c.

Bacteriological Laboratory.—Only a few specimens were dealt with during the year for the following reasons :—

(*a*) The smallpox outbreak.

(*b*) The laboratory requires renovating and re-fitting.

(*c*) A laboratory was established at the Newcastle Hospital for the first time, and as the hospital authorities were without a microscope (and as the Public Health Department one was very little required) the laboratory microscope was lent to the Senior Medical Officer.

Reports.—Reports were sent to the Local Authorities and to the Public Health Department on conditions found at 136 noxious trades and thirty-seven dairy premises, and also various sanitary matters by Sanitary Inspector Godfrey, 500 were sent by me on special and general subjects to Local Authorities and to the Public Health Department.

Special attention may be drawn to the following matters :—

Adamstown.—In the near future a considerable portion of this municipality will be connected with the sewerage system; 131 pans were done away with during 1915, leaving 446 premises still using pans. It was considered that at the present rate of reduction the whole municipality will be connected with the sewerage system in twelve months' time. Meanwhile it is advisable that the Local Authority should strictly enforce Ordinance 45 in regard to closet construction chiefly to avoid fly infestation.

Carrington.—Is not yet connected with the sewerage system, and meanwhile Ordinance 45 should be strictly carried out.

Hamilton.—The greater part of this municipality is now available for sewerage, and up to the end of the present year about 315 pans have been done away with, leaving about

about 920 in use. As last year I was informed that they had about 1,000 pans in use, this latter statement must have been considerably under the number at that time unless numerous houses requiring pans have been erected.

Maitland, East.—I understand that very few cesspits are still in use in this municipality. These should be done away with as leading to a possible outbreak of enteric. It is satisfactory that the anti-typhoid inoculation depots held here considerably diminished the incidence of this complaint.

Maitland, West.—The same remarks apply as in the case of East Maitland. The garbage disposal system is not altogether satisfactory as the garbage tip, which still requires special attention, is still too close to where food is prepared.

Merewether.—Although this town is now practically sewered, there will always be about twelve pans which will require attention by the Local Authorities. I advised the Council in 1914 to arrange with an adjacent municipality in regard to this matter.

The Hamilton Municipal Council was approached on the subject, but no arrangement was made. As these pans are quite outside any sewerage reticulation, the owners are burying contents on their own premises.

Morpeth.—All the ash closets which were in use here have been done away with and pans have been substituted.

New Lambton.—The provisions of Ordinance 45 are still not altogether carried out satisfactorily and the Ordinance should be rigidly enforced.

Newcastle.—An additional qualified Sanitary Inspector should be appointed to assist Sanitary Inspector Godfrey. House-to-house visitation and reinspection cannot be carried out satisfactorily with the present staff, and numerous houses which were visited and revisited during the smallpox epidemic showed that such constant inspection was very necessary.

Frog Hollow.—This locality was reported on unfavourably in 1914. It is in an awkward position as being incapable to being connected with the sewer. The chief defects have, however, been remedied and a duplicate pan system has been installed and also a steaming plant. The excreta and some garbage is carried out to sea by the municipal punt.

In a city of the size and importance of Newcastle a proper garbage destructor should undoubtedly be provided.

Rats.—Newcastle (as reported in 1914) is undoubtedly a rat-infested city, and until the Authorities render the wharves rat-proof and there is more energy manifested in rat destructions there will always be a danger of a serious plague outbreak.

During the year 1915 the number of rats captured, received and paid for by the Council at 3d. per head was 2,015.

The only precaution taken about rat infestation on the wharves at the present time is that the Navigation Department periodically set baits, and if the bait is taken it is supposed that the rat takes it, but this method gives no statistics.

Plattsburg and Wallsend.—During the year 1915 these two municipalities became a joint municipality under the name of Wallsend.

Wickham.—In 1915, 169 pans were done away with and up to December 1,217 were still in use. The same mistake was made in the information given me in 1914 as was made by the Hamilton Council, unless the discrepancies may be accounted for by a large number of new houses being erected and using pans.

Shires.

Bolwarra.—As reported last year, this Shire has no sanitary services, but the townships of Largs and Lorn decidedly require one. The great difficulty, however, still continues in securing sites for depots.

Cessnock.—There are still three sanitary services in this Shire. These are satisfactorily conducted. There are, however, no garbage services and they are decidedly required for the towns of Cessnock, Aberdare, and Kurri Kurri.

I understand that nothing has been done towards concreting the bed of the creek adjoining the main street in Cessnock, and this is very urgently required.

Lake Macquarie.—There are still five sanitary services in operation in this Shire.

Port Stephens.—There are no sanitary services in operation.

Tarro.—There are five sanitary services in operation.

Ordinance 45, *Section* 19 (*a*), provides that nightsoil pails shall be thoroughly washed and cleansed with a steam jet before they are removed from the depot or supplied for use on any premises.

This regulation seems still to be more honoured in the breach than in the observance, as the only Councils which comply with the Ordinance are Carrington, East Maitland, West Maitland, Wallsend, Newcastle, Morpeth, Singleton, and Cessnock Shire.

Steps are being taken to have the above Ordinance properly carried out.

Garbage Services.—The following Councils have garbage services:—Hamilton, Wickham, Newcastle, West Maitland.

Private Hospitals.—During 1915 there were twenty-two private hospitals in the Hunter River Combined District at the following places :—

Town.	Name and address.	Classification.
Abermain	Eames, M., "Castleford," Maitland-street	L. 1
Adamstown	Court, D. A., "Royal Mount," Union-street	L. 2
Cessnock	Moran and Brennan, "Mascot," Aberdare-street	M.S.L. 4
Hamilton	Collins, M. A., "Ednaville," Bibby-street	L. 1
	Gow, L. F., "Fettercairn," Lindsay-street	L. 6
	Johnston, M., Fawcett-street, Mayfield	L. 2
Kurri Kurri	Hastelow, M., "St. Elmo," Aberdare-street	L. 1
Maitland, East	Hadges, C., Morpeth-road	L. 1
Maitland, West	Sawyer, —, 10 Bourke-street	L. 1
	Kearney, E., Roxburgh-street, Lorn	L. 2
	Armson, E., Bourke-street	L. 2
	Long, G., "Cintra," Regent-street	.....
	Tooze, E. E., Sparke-street	L. 2
	Livermore, E. E., "Clifton Lodge," Adams-street	M.S.L. 10
Morpeth	King, —, "Karinya," James-street	L. 2
Newcastle	McCarthy, M., 125 Church-street	L. 3
	McDonald, M. L., "Pipitea Pah," Zara-street	M.S.L. 10
Singleton	McKnight, E., Castlereagh-street	L. 3
	Schmierer, S.	L. 5
	Morris, M., "Eskar," York-street	L. 2
	Badior, S., "Valetta," Church-street	L. 4
	Maffey, Dr., Broughton-street	M.S.L. 10

Military Duties.—In November, I was appointed M.O. in charge of the Permanent Troops, Newcastle.

As the Fort is only a short distance from the Health Office I complied with instructions and undertook the duties, which I continued for several days.

At the time I was under the impression that the Permanent Garrison Artillery were quartered in the Fort.

I, however, shortly found that not only were they not quartered in the Fort but that they resided with their families in various parts of the Municipalities round Newcastle.

As smallpox was in full force all over the district, I found that I could not perform my duties as Health Officer and at the same time manage what amounted to a general practice scattered over a very considerable distance.

I represented the matter to the P.M.O., New South Wales, and the duties were subsequently transferred to Dr. Harris.

On several occasions, by request of the Military authorities, I attended Recruiting Depots in several parts of the district.

In December, I was promoted to Major in the Australian Army Medical Corps, Reserve of Officers.

VITAL STATISTICS, &c.

Diphtheria.

The appended Table shows the number of cases in the Hunter River Combined District which were notified, also those treated in Hospital, and the attack rate and death rate from diphtheria per thousand of the population during 1915, also the number of cases notified in each month during the year. There were thirteen deaths from diphtheria during the year, all being inhabitants of the District; of these eight died in public institutions.

Table B.

District.	Estimated Population.	Cases Notified.	Removed to Hospital.	Attack-rate per 1,000.	Death Rate per 1,000.
Municipalities.					
Adamstown	2,800	9	9	3·2	.....
Carrington	2,600	3	3	1·1	.....
Greta	1,100	.....	.....	.....	.....
Hamilton	8,950	11	7	1·2	.....
Lambton	2,700	5	1	1·8	.....
Maitland, East	3,250	2	1	·6	.....
Maitland, West	8,600	15	15	1·7	·46
Merewether	4,350	12	8	2·7	.....
Morpeth	1,050	.....	.....	.....	.....
Newcastle	13,100	11	9	·8	·305
New Lambton	1,850	2	2	1·08	.....
Plattsburg	.....	.....	.....	.....	.....
Raymond Terrace	900	2	2	2·2	.....
Singleton	3,000	9	2	3·00	.....
Stockton	2,200	7	4	3·1	.....
Wallsend	5,850	5	4	·8	·17
Waratah	5,100	28	22	5·4	.....
Wickham	9,250	28	18	3·02	.....
Shires.					
Bolwarra	3,250	.....	.....	.....	.....
Cessnock	25,500	58	11	2·2	·15
Lake Macquarie	16,800	19	8	1·1	.....
Port Stephens	4,100	.....	.....	.....	.....
Tarro	6,900	6	2	·8	.....

Notifications of Disease for each month.—January, 21; February, 22; March, 23; April, 21; May, 25; June, 12; July, 16; August, 29; September, 18; October, 12; November, 17; December, 17. There was a total of 233 cases of diphtheria during the year.

Incidence.—The year 1915 was the seventh year during which diphtheria has been present in the Hunter River Combined Districts, and it is not satisfactory to find that the number of cases notified is the largest since 1910.

In the previous five years the notifications numbered as follows:—1910, 373; 1911, 210; 1912, 177; 1913, 189; and 1914, 171.

The highest number of cases occurred in March, May and August, and the lowest in June, July, November and December.

All municipalities reported cases except Greta, Morpeth and Plattsburg. All the shires except Bolwarra and Port Stephens.

Two hundred and thirteen houses had one case each, seven houses had two cases each, and two houses had three cases each.

Schools.—Of those attacked, forty-three attended at various public schools in the District.

Milk Supply.—The milk supply was carefully noted. Six cases occurred from five dairies. Of these three dairies were in Cessnock Shire, one dairy in Newcastle, and one dairy in Waratah.

There was no evidence to connect cases with their milk supply. Forty-five cases were reported as consuming no milk, nine owned their own cows, sixteen used condensed milk, none report taking goats' milk.

Causes.—As mentioned in my report for 1914 in a somewhat extensive anti-diphtheria campaign, I had to conduct in the Mackay District of North Queensland in 1913, where about 1,300 "carriers" were detected, it was found that the chief causes of infection were kissing, domestic articles (such as cups), towels, common school cups, pens, pencils, slates, unboiled laundry, toys (teddy bears), and not unfrequently the carelessness of parents in allowing their children to visit families with diphtheria.

The only remedy for the above dangers seems to be as in infectious diseases generally, the education of the public in hygienic matters.

Hospital.—Out of the 233 cases notified 128, or 55·1 per cent., received hospital treatment. This is 13·3 per cent. less than were treated in hospital in 1914, which might account for some of the increased number of cases.

Increased Notifications.—Since so many soldiers went to the front a great many families have given up their houses and joined with other families in inhabiting one house and crowded together more generally.

This may possibly have been one of the causes for the increase in the diphtheria notifications.

Mortality.—Notwithstanding the large number of cases, the disease has been of a mild form, as the death rate per thousand of the population has been 0·097, which is favourable as compared to the rate for New South Wales, which is ·146.

Scarlet Fever.

Table C of this report shows the number of cases of scarlet fever notified in the Hunter River Combined District, the number treated in hospitals, and also the attack rate and death rate per 1,000 of population for 1915, followed by number of cases notified for each month of the year. There were no deaths during the year.

Table C.

District.	Estimated Population.	Cases Notified.	Removed to Hospital.	Attack-rate per 1,000.	Death-rate per 1,000.
Municipalities.					
Adamstown	2,800	10	.....	3·5	Nil.
Carrington	2,600	3	1	1·1	„
Greta	1,100	1	1	·9	„
Hamilton	8,950	44	5	4·9	„
Lambton	2,700	11	.....	4·07	„
Maitland, East	3,250	12	1	3·3	„
Maitland, West	8,600	25	13	2·9	„
Merewether	4,350	7	1	1·6	„
Morpeth	1,050	.....	.....	.....	„
Newcastle	13,100	15	5	1·1	„
New Lambton	1,850	.....	.....	.....	„
Plattsburg	.....	.....	.....	.....	.....
Raymond Terrace	900	6	.....	·6	„
Singleton	3,000	25	4	8·3	„
Stockton	2,200	14	1	6·3	„
Wallsend	5,850	9	1	1·5	„
Waratah	5,100	24	4	4·7	„
Wickham	9,250	13	3	1·4	„
Shires.					
Bolwarra	3,250	.....	.....	.....	„
Cessnock	25,500	65	6	2·1	„
Lake Macquarie	16,800	41	1	2·4	„
Port Stephens	4,100	8	.....	1·9	„
Tarro	6,900	58	.....	8·4	„

Notifications of Scarlet Fever for each month.—January, 21; February, 36; March, 54; April, 55; May, 37; June, 24; July, 19; August, 18; September, 14; October, 14; November, 71; December, 27.

Incidence.—In the year 1915 there were 390 Scarlet Fever notifications—the highest recorded since 1909 inclusive. Of these, 218 were from fifteen Municipalities and 172 from 4 Shires. No cases were notified from two of the Municipalities, namely, Morpeth and New Lambton, and from one Shire, namely Bolwarra. This latter Shire also notified no cases in 1914.

In the previous five years the number of notifications were :—1910, 572; 1911, 264; 1912, 113; 1913, 110; 1914, 321.

The highest number of cases occurred in March, April and November; September and October being the lowest.

Tarro Shire.—A considerable portion of the increase was caused by an outbreak in Tarro Shire (chiefly in Minmi), where a total of fifty-eight cases occurred, forty-nine of these occurring in November.

Houses.—325 houses had one case each, 22 had two cases each, 4 had three cases each, 1 had four cases, and 1 had five cases.

Schools.—Of those attacked 128 were attending one or other of the schools in the district.

Milk Supply.—One hundred and eleven persons stated that they used no milk, forty-three owned their own cows, twenty-three used condensed milk, and one used goats' milk. One case each occurred in two dairies, one at Wickham and one at East Maitland.

There was no evidence to connect cases with their milk supply.

Causes.—There would seem to be no satisfactory explanation as to why scarlet fever causing only 110 cases in 1913 should have caused 321 in 1914 and 390 in 1915.

There is, however, no doubt that the epidemic being a mild one, very few precautions were taken, and if it is to be stamped out much greater care will have to be taken in disinfecting premises and material.

At present in this district there is very little, if any, disinfecting done after scarlet fever by the Local Authority, and when done it is usually by the householders who know very little about it. According to statute a medical practitioner is supposed to certify that he is satisfied with the process used, but it is difficult to believe that they were satisfied with 325 houses disinfected by the sulphur process, which is the one usually used by householders.

Hospital Treatment.—Of the 390 notified cases 47, or 12 per cent., received hospital treatment.

Increase of Notifications.—The increase of notifications may have partly been caused by circumstances mentioned in regard to diphtheria, namely, more overcrowding.

Mortality.—Although there were a large number of cases, the disease was of a very mild form and there were no deaths. The death rate per thousand of population for New South Wales was ·025.

Typhoid Fever.

Table D shows the number of cases of typhoid fever notified in the Hunter River Combined Districts, the number treated in hospital, and also the attack and death rates per thousand of the population during the year 1915, followed by the number of cases notified for each month of the year. There were thirteen deaths, twelve of which occurred in public institutions and all belonging to the district.

Table D.

District.	Estimated Population.	Cases Notified.	Removed to Hospital.	Attack-rate per 1,000.	Death-rate per 1,000.
Municipality.					
Adamstown	2,800	.....	.....	.....	.....
Carrington	2,600	1	1	·38	.....
Greta	1,100	1	.....	·9	.....
Hamilton	8,950	6	2	·6	.....
Lambton	2,700	5	.....	1·8	.....
Maitland, East	3,250	3	2	·9	·35
Maitland, West	8,600	13	13	1·5	·11
Merewether	4,350	2	2	·4	.....
Morpeth	1,050	.....	.....	.....	.....
Newcastle	13,100	3	3	·2	·38
New Lambton	1,850	.....	.....	.....	.....
Raymond Terrace	900	.....	.....	.....	.....
Singleton	3,000	.....	.....	.....	.....
Stockton	2,200	.....	.....	.....	.....
Wallsend	5,850	17	9	2·9	·51
Waratah	5,100	11	6	2·1	.....
Wickham	9,250	4	2	·43	.....
Shires.					
Bolwarra	3,250	1	.....	·3	.....
Cessnock	25,500	27	25	1·05	·03
Lake Macquarie	16,800	8	6	·4	.....
Port Stephens	4,100	1	.....	·24	.....
Tarro	6,900	2	2	·27	·28

Notifications of Typhoid Fever for each month.—January, 22; February, 14; March, 15; April, 11; May, 3; June, 6; July, 2; August, 2; September, 2; October, 1; November, 11; December, 16. There was a total of 105 cases of typhoid fever during the year.

Incidence.—Of the total 105 cases notified during the year, 66 were notified from eleven of the municipalities and 39 from the five shires.

As it had to be reported in 1914 that the 150 cases was the highest number since 1910, it is satisfactory to have to report that the 105 cases of 1915 are the lowest number reported since 1910. The notifications since then are :—1910, 154; 1911, 131; 1912, 132; 1913, 121; and 1914, 150.

The highest number of cases occurred in January, February, March, April and December, which months are coincident with the "fly and dust season." The same conditions were reported for 1915. October was the lowest month when only one case was notified.

No cases were reported from Adamstown, Morpeth, New Lambton, Raymond Terrace, Singleton or Stockton, but were reported from all the other municipalities, and cases were reported from all the shires.

Houses.—Eighty-nine houses had one case each, four houses had two cases each, and two houses had four cases each.

School.—Of those attacked fifteen were attending one or other of the schools in the district.

Milk Supply.—No cases occurred in connection with a dairy and no dairy seems to be the origin of any cases.

Of the total cases ten owned cows, four used condensed milk, one used goats' milk, and forty-five stated that they used no milk.

The people who reported owning cows were not registered dairy keepers. It is quite possible that some of these owners of cows might be selling milk to their neighbours, but of course a list of such customers could not be obtained, neither would the customers be likely to give any information on the point.

Hospital Treatment.—Of the 105 cases 73, or 69·5 per cent., received hospital treatment.

East Maitland.—In the report for 1914 I mentioned that a special investigation had to be made in parts of High-street, East Maitland, where typhoid seems to have been endemic for several years.

The investigations showed a variety of unsatisfactory conditions, and it seemed to me that the ordinary instructions as to dealing with matters would not be satisfactory. When Medical Inspector, Northern Queensland, I had to deal with a very wide and extended outbreak of typhoid in the Winton District of Queensland, which included not only Winton and other townships, but several hundred miles round, and with great danger of a general spread of the disease.

In this case I found that no measures could arrest the extension of the epidemic except anti-typhoid inoculation. This was duly carried out, and over 600 persons of all ages and sexes received (mostly) three doses of the vaccine. Each person was furnished with a card requesting a communication to be made direct to the Public Health Department, Brisbane, Queensland, should any attack of typhoid occur after the inoculation. In connection with this it may be mentioned that up to the present date no such communication has been received.

Referring to this it occurred to me that the best plan of dealing with the particular district in East Maitland would be in the same way. I therefore recommended the Council to arrange for anti-typhoid depôts, which were held, and a considerable number of persons received one or more doses of the vaccine, which were administered by Dr. Alcorn, the Government Medical Officer—the vaccine being obtained from the Public Health Department, Sydney. Fifty-seven people were inoculated once, forty-four persons were inoculated a second time, and seven or eight a third time.

It is satisfactory to be able to report that up to the present time no further notifications of typhoid fever have been received from this locality.

Morisset.—About January numerous cases of typhoid were reported from a special vicinity in Morisset, and I recommended the Lake Macquarie Shire Council to advise the people who were living in the immediate locality to be inoculated. Some six people were inoculated once, two twice, and one the third time, by Dr. Harris, the Government Medical Officer, Newcastle. Up to the present time no further cases have been notified from this vicinity.

Typhoid Fever a Measurement of the Sanitary Intelligence of a Population.—If the theory is correct that the amount of typhoid fever in any given district is a measurement of the sanitary intelligence of the community, then the sanitary intelligence of the Hunter River Combined Districts must have been of a very high order during the year 1915—for it is very satisfactory to have to report that the number of cases notified and the number of deaths were fewer than has ever been the case before, not only in actual numbers but in regard to the percentage. It is rather unfortunate that a similar intelligence does not seem to have been applied to the smallpox outbreak, otherwise, in all probability, it would have been very much limited.

Widal Reaction.—I have again to submit the following for serious consideration :—

It is worth considering whether the increasing reliance for a diagnosis of typhoid fever on this reaction may not be a danger to the health of the public, especially in view of the fact that a "positive" reaction usually cannot be obtained for at least a week, that some cases give no reaction, and that some of the most severe do not give a positive reaction at all.

If the blood specimen is sent for examination probably no special precautions are taken in many cases as such instructions are difficult to carry out in any really uniform way, and are troublesome to the patient's family, till the result has been received.

Should the report be negative, which, with all possible sources of error, proves nothing, then the case is decided not to be typhoid with possible disastrous results.

It would seem that in cases which are sufficiently serious to warrant a blood specimen being sent for examination should be considered sufficiently dangerous to the public to warrant all precaution being taken which typhoid fever requires, and that where the clinical symptoms indicate typhoid or diphtheria the cases should be treated and isolated accordingly.

Typhoid Investigation Form.—I would suggest the adoption of the following in the investigation form which is filled up by Sanitary Inspectors when inquiring into the case :—

1. A question should be added as to whether the premises and contents were disinfected; if so, by whom.
2. What method of disinfection had been carried out?
3. The question how long before the illness began had the patient lived on the premises is often filled in "All his life" this particular query should be expanded so as to give the further information :—
   (*a*) How long and how often has the patient been absent from these premises lately?
   (*b*) Where was the patient during these periods and with whom was he or she brought in contact?
   (*c*) Have any visitors, friends, or others been on the said premises, and, if so, have any been ill, as for example "Had any of them just come out of a hospital after an attack of enteric fever?"—or "Had any of them ever had an attack of typhoid fever?"

Mortality.—The total deaths were thirteen, which made the death rate per thousand of the population ·097 (the same as diphtheria), as compared with the rate for New South Wales, which was ·117.

Variola.

Table E shows the number of cases notified in the Hunter River Combined Sanitary District during the year 1915, and also the number of cases treated in hospital, together with the attack rate and death rate per thousand of the population, and the number of cases notified for each month of the year. There was no mortality.

Table E.

District.	Estimated Population.	Cases Notified.	Removed to Hospital.	Attack-rate per 1,000.	Death-rate per 1,000.
Municipalities.					
Adamstown	2,800	17	17	6·07	.....
Carrington	2,600	5	5	1·9	.....
Greta	1,100	2	2	1·8	.....
Hamilton	8,950	57	57	6·3	.....
Lambton	2,700	15	15	5·5	.....
Maitland, East	3,250	.....	.....	.....	.....
Maitland, West	8,600	2	2	·3	.....
Merewether	4,350	12	12	2·3	.....
Morpeth	1,050	.....	.....	.....	.....
Newcastle	13,100	37	37	2·8	.....
New Lambton	1,850	31	31	16·7	.....
Plattsburg	.....	7	7	.....	.....
Singleton	3,000	1	1	·33	Nil.
Raymond Terrace	900	.....	.....	.....	.....
Stockton	2,200	1	1	·45	.....
Wallsend	5,850	22	22	3·7	.....
Waratah	5,100	12	12	2·3	.....
Wickham	9,250	62	62	6·5	.....
Shires.					
Bolwarra	3,250	1	1	·3	.....
Cessnock	25,500	94	89	3·6	·03
Lake Macquarie	16,800	16	14	5·2	.....
Port Stephens	4,100	1	1	3·9	.....
Tarro	6,900	3	3	·43	.....

Notifications of Variola in each Month.—January, 2; February, 28; March, 8; April, 3; May, 2; June, 17; July, 16; August, 19; September, 55; October, 124; November, 88; December, 38. There was a total of 400 cases of variola during the year.

Incidence

Incidence.—The year 1915 was the third year during which variola has been prevalent in the Hunter River Combined Districts, and was the one in which by far the larger number of cases occurred.

In the previous years the number of cases were as follows:—1913, 3; 1914, 48; 1915, 400.

The greatest number of cases occurred in October, November, and December; the next largest number being in February, June, and September. The smallest numbers occurred in January, April, and May.

All municipalities reported cases except East Maitland, Raymond Terrace, and Morpeth, and cases occurred in all the shires.

Houses.—271 houses had one case each, 28 had two cases, 7 had three cases, 3 had four cases, 3 had five cases, 2 had seven cases, and 1 had eleven cases.

Schools.—Details were not kept in regard to the number of persons affected attending school, as the visiting medical officer's report only requires a statement as to schools attended by children in the house. I can state, however, that the number attending school was very small.

Milk Supply.—This is not required on the Visiting Medical Officer's report. No case, however, was noted from any registered dairy, and subsequent investigations showed there was no evidence to connect the cases with a milk supply.

Hospital.—All the above cases were treated in an isolation hospital or the isolation wards of a hospital, except two cases in Lake Macquarie Shire, which were quarantined in their own house, which was sufficiently isolated for the purpose.

History of Smallpox Outbreak, 1915.

The Hunter River District Isolation Hospital was closed for the second time on August 8th, 1914, the last smallpox patient being discharged on that date and re-opened September 17.

This seemed exceedingly satisfactory notwithstanding which, owing to the decided tendency of the population to conceal their cases, and the fact that two or three of the more recent cases had not been traced, I reported to the Director-General of the Public Health Department that it was to be feared there might be a return of the disease later on.

Before very long, namely, on 19th January, cases were found in Newcastle, and these seemed to be the beginning of an outbreak, the description of which will have to be divided into three sections.

1. Cases which occurred in Newcastle and the surrounding municipalities and immediate districts, in two outbreaks, including Tarro and Lake Macquarie.
2. Cases which occurred in two separate (apparently) outbreaks in Cessnock Shire, particularly round Kurri Kurri and Cessnock, also Port Stephens.
3. Cases which occurred outside the District.

Newcastle and immediate Districts.—During the outbreak which occurred on 19th January and lasted till 23rd March seven cases occurred in the District, and on 23rd March the District was to all appearances clear of the disease.

During the outbreak—which was contemporary with the second one in Cessnock Shire—when the Isolation Hospital was opened again for the fourth time on 10th August, there were 325 cases in Newcastle and the immediate districts.

Cessnock Shire, &c.—During the first outbreak, which occurred from February 9th to 13th May, there were thirty-six cases. During the second outbreak, which occurred from 25th May to the time that the remaining five cases were removed from the Kurri Kurri Hospital Isolation Wards to the Hunter River District Isolation Hospital on 10th August, there were thirty-nine.

Outside District.—One case occurred in Gloucester, namely, the postmaster of that town, who was treated at the Isolation Hospital.

Newcastle District.—The first cases, which occurred on 19th January, occurred in "Off" Laman-street, but the closest investigation failed to ascertain the origin of infection.

The last case had occurred on 26th October, 1914, consequently there had been nearly three months without a case being reported.

As, however, many cases were shortly discovered in the Hunter River Combined Districts, the infection might have been received from various sources, or possibly outside that District altogether.

During this particular outbreak cases occurred in Adamstown and Newcastle, the cases in the former place being of great importance as it was from them that the cases in the first Cessnock outbreak of 1915 was discovered.

On investigation I was informed that the infection of the five cases concerned was probably obtained from a nephew who had visited them from Weston, and who was stated to have had a similar rash. This will be referred to later when describing the outbreak in Cessnock Shire.

The last case was discharged from the Isolation Hospital on 22nd March, which ended the first epidemic of 1915.

The

The Second Outbreak.—Commenced on 5th July, when a case was reported in Hamilton.

This was followed by several other cases, but as it was hoped that these cases would be limited, they were sent to the Kurri Kurri District Hospital Isolation Wards for treatment, instead of re-opening the H.R.D. Hospital.

Eventually, however, as the number of patients diminished in the Kurri Kurri Hospital the last patients, five in number, were taken down to the H.R.D. Hospital on 10th August, and that Hospital remained open for the rest of the year. During this outbreak the only municipalities which escaped having cases were East Maitland and Raymond Terrace, while all the Shires had cases, Bolwarra Shire escaping with only one case.

Cessnock Shire.—As mentioned above, the Adamstown cases in the first Newcastle epidemic were traced to the visit of a nephew from Weston.

On hearing this I immediately proceeded to Kurri Kurri on 10th February to investigate, and, in company with Dr. Heupt, G.M.O., Weston, and Dr. St. Vincent Welch, made a survey of the village of Weston, when we found about fifteen cases in various stages of variola in the township and vicinity.

In all probability cases had been running on for a very considerable time, which might account for infection in different parts of the State.

The Kurri Kurri Hospital Isolation Wards were at once utilised and the patients sent in for treatment. During this outbreak cases occurred chiefly in Weston and vicinity, while Kurri Kurri, which furnished so many cases during the second outbreak, had only one case.

The last case from the Kurri Kurri Hospital was discharged on 13th May.

It was also hoped that this last case was the last case of Variola in the State of New South Wales, but I again reported that owing to the tendency to conceal cases, I felt rather doubtful whether this was so.

This attitude of doubt was justified by the second outbreak in Cessnock Shire, which was of very considerable dimensions.

The first of the very numerous cases was reported by the late Dr. Collings-Dawson, of Weston, as being a suspicious one on 25th May.

I at once proceeded to Kurri Kurri to investigate and found the case was one of Variola, and it was at once sent to the Isolation Wards at the Kurri Kurri District Hospital.

During this epidemic, which lasted till the end of the year, cases occurred in Kurri Kurri, Heddon Greta, Pelaw Main, Cessnock, Weston, Abermain, Aberdare, and adjacent localities.

Extra District, Gloucester.—One of the five cases which occurred at Gloucester, in Stroud Shire, was treated at the Hunter River District Hospital. It probably would not have been so, as being so far outside the District, only the individual in question travelled down by train and presented himself at the office of the Public Health Department in Newcastle requesting to know whether he was suffering from smallpox.

He *was*, and this is a very good example of the way in which the disease is spread by thoughtless persons amongst the community.

General Administration of the Smallpox Outbreak in the Hunter River Combined Districts.

General instructions had been received on the outbreak of the war of 1914 that contingencies were to be attended to in the following order :—

1. Any assistance that could be given to the Military Authorities was to take precedence.
2. Smallpox had to be dealt with next.
3. General public health matters had to take the third place if numbers 1 and 2 require special attention.

During the earlier outbreaks the staff of this office had to devote a considerable amount of time to dealing with the cases, but in the later outbreaks practically the whole of the time had to be devoted to dealing with the epidemic.

As notifications requiring instant attention came in at all times the office was kept open from about 8 a.m. to 6 p.m., including Saturdays, Sundays and holidays.

The following was the general method of procedure. On a case being notified, and during this epidemic all notifications were accepted either from practitioners, police, or private individuals whether made by telephone, in writing or verbally :—

1. The police were at once requested to quarantine the premises notified in order that everybody in the house might be seen on the earliest opportunity.
2. The livery stable where the ambulance was housed was notified as to the time it might be required.
3. The manager for the Mental Hospital, Stockton, was communicated with by telephone that a patient might be expected. (N.B.) The Isolation Hospital is about 300 yards distant and is connected with a telephonette. Later in the year the Isolation Hospital was connected with the Health Office directly by telephone, which was very much more convenient, the number being 62 Stockton.

4. The case was at once investigated by myself or, if I was out on another case, by an official from the Department, and the required investigation form filled up (see annexed form) if the case was found to be positive.

5. The ambulance was again communicated with from the nearest telephone and given the time (on that day if possible) when the patient would have to be removed.

6. All contacts were advised to be vaccinated, and in most cases they acquiesced, in point of fact more readily than during the outbreak of 1914. In some cases, however, difficulties were encountered.

   (*a*) Some contacts did not want to be vaccinated.

   (*b*) To begin with, most of the people were absent from the house and working at different places and hours.

   (*c*) Putting on the quarantine at once prevented my missing the people on a second call, as used to be formerly the case, when I might go a distance of several miles, possibly in an evening, and find them all out.

   (*d*) Even if vaccinated at the time the contacts might be and very often were in the incubation period of the disease and the quarantine prevented them being at large amongst the public.

7 (*a*) Provided all the contacts accepted vaccinated the house was quarantined for fourteen days from the time of the removal of the patient.

   (*b*) If any of the contacts refused to be vaccinated the premises and people were quarantined for twenty-one days.

   (*c*) If any of the inmates had been successfully vaccinated within the last ten years and were vaccinated again at the time of my visit, they were allowed, after the removal of the patient and disinfection of the premises, to leave the house and reside elsewhere. They were, however, not to be allowed to return to the house once they had left it.

   (*d*) If a patient had to be treated on the premises, or, owing to unforeseen circumstances, such as the hospital being overcrowded, could not be removed at once to the hospital, any person qualified by paragraph (c) was allowed to leave after having their effects disinfected.

8. The patient was removed either by ambulance or by motor car according to circumstances and taken across the harbour by the punt plying between Newcastle and Stockton. On several occasions of emergency the car had to convey the patient via Hexham, making a distance of nearly 40 miles.

9. On the removal of the patient the Sanitary Inspector of the district was at once notified to disinfect the premises. If he was not capable of doing so satisfactorily the work was performed by Sanitary Inspector Godfrey, of this Department.

10. All contacts who might be absent had to return to the premises, police assistance being obtained if necessary.

11. If any contacts had been missed owing to being absent when the official visit was made, visits continued to be made until such contacts had been seen and vaccinated or otherwise dealt with according to circumstances, which meant in case of refusal a quarantine for twenty-one days.

12. All places where contacts or cases were employed were notified and advice was given that those working with them should be vaccinated, and this was very frequently done at the Public Health Office.

13. So far as possible daily visits, or visits at longer intervals, were made to quarantine contacts to see if other cases developed, and they were specially instructed to communicate through the police or a neighbour if any of the prescribed symptoms were felt. This frequently enabled cases to be removed in a very early stage.

14. The investigation form above alluded to was forwarded by the first post to the Public Health Department in Sydney in order that any further instructions which might be thought necessary could be sent at once to this Office, and it filed as a record.

In addition to the above the following was also carried out where required:—

1. If it could be managed without any danger to the public arrangements were made that any business, in connection with which a case had occurred, could be carried on. In other words, as far as possible business was not interfered with.

2. If the circumstances of the people required it the local Benevolent Society (wherever the case happened to be) was communicated with on their behalf.

The above methods were carried out in all districts with slight modification according to local conditions.

The

The following items require a little further comment :—

Investigation.—In order to prevent the disease spreading a proper and thorough investigation was as important as the removal of the patient in order that the source of the disease might be discovered and any contacts, apart from those resident on the premises, dealt with. This searching out was frequently a very difficult matter and required some "Sherlock Holmes" qualities in connection with the officials making the investigation.

Frequently the details given at first were entirely wrong and misleading. Re-investigation was necessary on subsequent visits, and frequently the truth was not arrived at till long after the patient was removed. As an example of the difficulties and also of the way in which the disease was spread broadcast the three following incidents are submitted :—

1. One of the worst cases was an elderly woman who, on being investigated, declared that she had not the slightest idea as to how her case was contracted. Subsequent investigation showed that her son had had a very severe attack, that she had nursed him for nearly five weeks and during the whole of that time had not called in a doctor. This son, amongst other avocations, was the local newspaper distributor, and had undoubtedly carried out his calling when in a highly infectious condition. The crucial point of this particular case was that the policeman who accompanied me specially informed me that, whatever the difficulties of other cases, this old lady was a particularly reliable person, and I might rely on the truth of what she said.
2. On visiting one patient who was in bed with a very bad attack and his face absolutely covered with pustules, three friends were found sitting close to him and the whole lot playing at cards.
3. A third patient, who was very aggressively disposed towards measures which were being taken, stated that he did not believe that smallpox was infectious, proved his faith by "kissing" a particularly bad case of smallpox. About fourteen days after this individual was in the hospital with smallpox himself.

Quarantine.—The quarantine arrangements were entirely in the hands of the Police Department, the request for quarantining being made to them from this office.

The arrangements were most satisfactorily carried out, and except for one or two minor attempts which were very speedily dealt with, the system worked with the greatest possible success. This was very satisfactory, considering that at least 315 premises had to be supervised at different times.

Notwithstanding this large number there were very few complaints in regard to quarantine, and the few that were made were generally with a view to ulterior matters quite apart from that subject.

M.O.H. at Kurri Kurri.—From the latter end of May to the 10th August I had to reside at Kurri Kurri to deal with the extensive outbreak at Cessnock Shire.

While there frequent visits had to be made to Newcastle and surrounding districts in connection with other cases and other public health matters.

Stockton Isolation (now H.R.D.) Hospital.

When the patients were removed to the Hospital they came under the treatment of the medical officer in charge.

Dr. Grieves, of Stockton, who had been in charge of the hospital, proceeded with the Expeditionary Force to Egypt, and was succeeded by Dr. Shellshear, Dr. Bowker, and subsequently by Dr. Clark (late of Newcastle Hospital). All these officers did excellent work, but the greater part of it was done by Dr. Clark, as he was there during the heaviest part of this epidemic and to the end of it.

During the first outbreak the accommodation was sufficient.

There were two nurses in charge, namely, Nurse Hyde, who relieved Nurse Inspector Fletcher, who had reopened the hospital. Nurse Hyde was relieved in turn, on going to Victoria Barracks, by Nurse Lucy Spencer, and she in turn again was relieved by Nurse McBride. These nurses performed their duty very satisfactorily.

During the second epidemic the accommodation was found to be quite inadequate (the number of cases with a few contacts reaching a total of 104), and considerable additions had to be made under the superintendence of Sanitary Inspector Godfrey and of Senior Inspector Cresswick, who came up from Sydney to assist. The additions were an additional ward with two additional annexes on the male side and an additional ward and two additional annexes on the female side. Covered ways were erected from the wards to the administration block. The additional ward which had been erected at the Kurri Kurri District Hospital was taken down, brought to the Hunter River District Hospital, and erected as a dining-room. Two bath heaters were intalled and an oil engine obtained to pump water into the tanks. This engine was absolutely necessary to provide the water for a total of 130 persons (including staff), as three 800-gallon tanks required constant filling owing to the amount of water used for baths, &c. In addition to the bath-heaters, two coppers had to be obtained to provide the hot water required. There was also a laundress on the staff.

The

The staff had to be considerably increased owing to the number of cases and the amount of attention both day and night which the cases required. The staff consisted of the Matron in charge, Nurse Steer, with Nurses Price, Stanger and Burrows, and Wardsmen Hilton and Curtis.

This staff worked exceedingly well under particularly trying circumstances most of the time. Nurse Steer, in particular, took charge after a very hard time at Kurri Kurri and certainly administrated a very heterogenous set of patients in a very able way.

The epidemic had attacked all ages, sexes, and callings, and at one time there was in hospital a doctor (who had previously been vaccinated three times but never taken), a bank manager, a commercial traveller, and an ex-mayor, besides a variety of other callings.

The meals were provided by the Mental Hospital (which is close by) under the strictest supervision.

These meals were of the very best quality and were much appreciated by the patients, many of whom were very much benefited (apart from the smallpox) by their stay in the Isolation Hospital owing to the good food and treatment, both medical and nursing. For about six weeks during the latter part of the time the Rev. O'Brenzon Ball was in residence as Chaplain to the hospital and did exceedingly good work there, which was much appreciated, and whose death we much regretted to hear of afterwards.

It certainly seemed very convenient on the birth of a baby in the hospital that there was a doctor to advise and a clergyman to christen it.

I think it may be said that the people in hospital were so well looked after that in the long run it was looked upon almost as a picnic to be sent in, and on several occasions people asked if they might stay in a day or two longer than the required time to arrange their affairs on leaving.

The very few complaints which were received, and which were only to be expected when such a very large and varied undertaking was administered, were very carefully looked into both by this Office and from headquarters in Sydney, and were all without exception found to be without any foundation.

By the 31st December, 1915, the epidemic had diminished very considerably, and there were only twelve patients in hospital, namely—seven males and five females.

Kurri Kurri District Hospital.

On 10th February the Kurri Kurri Isolation Wards were opened by Nurse Mayton, who ceased duty with the Baby Clinics in Newcastle for the two days she was absent, by the kind courtesy of the Hon. John L. Fegan. She was relieved by Nurse Inspector Fletcher, of this Department, who was relieved in turn by Nurse Steer.

Sanitary Inspector Godfrey proceeded to Kurri Kurri to superintend the addition of an annex to the Isolation Wards.

Owing to the spread of the epidemic the Kurri Kurri Hospital was proclaimed an "Infected Area" in the *Government Gazette* of 15th March.

Later on, 15th April, the quarantine was lifted from the main buildings, but still held good so far as the isolation wards were concerned.

This entailed the very strictest quarantine and supervision by the police. No one was allowed in or out of the hospital without a pass signed by me personally.

So well was the quarantine kept that officials from the Public Health Department in Sydney were required to produce my signed pass in addition to their own general State passports.

The Hospital was closed in due course on 13th May.

It was opened again on 25th May by Nurse Mayton, who ceased duty with the Baby Clinics in Newcastle for the two days she was absent by the kind courtesy of the Hon. John L. Fegan. She was relieved by Nurse Inspector Fletcher, of this Department, who was relieved in turn by Nurse Steer. It remained open till 10th August, when the remaining five patients were removed, in charge of Nurse Steer, to the H.R.D. Hospital. I personally saw the patients off, and then, accompanied by Mr. Hampton, who was left in charge of the Government property till it was removed to the H.R.D. Hospital, inspected the vacated wards to ascertain that everything had been left in a cleanly condition and in good order—which they were.

During the first outbreak there were thirty-six cases in the Cessnock Shire District, of which all but three were treated in the Isolation Hospital.

In the second outbreak thirty-nine cases were treated in the Hospital, all being sent there.

As most of the cases, while being severe as to eruption, were mild in general symptoms, the administration was rather hard as to work, and Nurse Steer—who did all she possibly could for the pleasure as well as the care of the patients—and in point of fact might be said to have been too yielding to numerous and heterogenous demands—very nearly broke down. Finally Nurse Fletcher was sent up to her assistance and, having had experience as sub-matron at Waterfall, was able to instruct her in the required discipline, the results being exceedingly beneficial not only in Kurri Kurri, but also in her still harder work when in charge of the H.R.D. Hospital.

Vaccination.

Vaccination.—As vaccination is the only known means of protecting the individual or the community (though many weird suggestions were brought to this office for the same purpose) every effort was made to induce the community to be vaccinated and the following method was adopted.

1. I personally held depots, as did other officials of this office, and repeated the same till practically no attendance resulted, at the following places:—Weston, Kurri Kurri, Adamstown, Wallsend, Wickham, Hamilton, Lambton, New Lambton, &c.
2. A circular was issued to all medical practitioners of the H.R.C.D. authorising them to vaccinate any applicants, when an allowance of 2s. 6d. per head would be made. Vaccination was done at the consulting rooms and depots were held by them at Cessnock, Abermain, Weston, Kurri Kurri, East Maitland, &c.
3. The Public Health Office in Newcastle was open for vaccination from 9 a.m. to 5 p.m.
   (*a*) From Mondays to Fridays, and till noon on Saturdays.
   (*b*) Later on this was increased to from 9 a.m. to 5 p.m. on Saturdays, as well as other week days, and also on Sundays and holidays.

The result of this was that about 8,000 persons were vaccinated.

New Zealand lymph was used throughout with the most satisfactory results, and very few sore arms were reported.

Of all the cases seen only a few had been vaccinated at all, of the few none had been vaccinated within ten years, and many old people who had been vaccinated in infancy were the only ones who escaped of a whole family.

Sex Attacked.—For some time it was rather a puzzle why so many men were affected as compared to the women and children, but when notification became more general from the laity it was found that quite as many women as men were attacked.

The reason evidently was that doctors were frequently not called in for women and children unless the cases were very severe, but the men had to call them in, if they laid up at all, in order that they might get their various certificates signed.

Type of Attack and Mortality.—While there was no mortality in the 400 cases, the type of the disease was undoubtedly much more severe than in the preceding year, and nearly a dozen cases in the H.R.D. Hospital caused very grave anxiety as to the result. A considerable number of the cases were very severely "pitted."

Differential Diagnosis.—A good many of the cases were difficult to diagnose as they were somewhat different from cases I have seen in England, South Africa, and India.

Dr. Armstrong's article, "The Recent Epidemic of Smallpox in New South Wales," was again of very great use as nearly all the cases fulfilled his description, namely:—

1. None of the cases had been vaccinated within ten years.
2. All the cases, except of course young children, suffered from influenza pains.
3. From two to six days after the pains the rash appeared in the typical places.
4. When the rash appeared the patient felt considerably better.

The most valuable diagnostic points were:—

1. The preliminary influenza pains.
2. The distribution of the rash in the following order: face, extensor surfaces of arms, and leg about ankles, palms of hands, soles of feet, lips and inside mouth.

Comparison with Home, South African, and Indian Cases.

Again the cases differed from other cases I have seen as follows:—

1. The rapid transition to the pustular stage.
2. The papular and vesicular stages being very short, especially the vesicular.
3. The absence of secondary fever and the feeling of being better permanently after the rash developed.
4. The survival of cases with almost confluent eruptions which one would have expected to terminate fatally.

I was called to a large number of "suspicious cases" in various parts of the district to assist in coming to a decision as regards the diagnosis.

In more than one case the decision could have been arrived at without my assistance had information in regard to vaccination been asked for.

Fomites.—No cases were traceable to fomites.

I would again submit that if all practitioners could persuade any patients with "influenza pains" to be vaccinated it would have a considerable effect in arresting the spread of variola and especially in a district where it has been for some time endemic.

Police Department.—I take this opportunity of thanking the Police Department, and in particular Superintendent Goulder, Inspectors McHardy, Walker, and Evans, and the officers under their charge, for the very able, prompt and valuable assistance during the various outbreaks, and especially for the very admirable way in which the quarantine was supervised.

MALARIA.

MALARIA.

In 1914 I sent in reports in regard to the possible spread of malaria in New South Wales from patients returning to or newly arriving in the State infected with malaria.

The great danger, of course, is the possibility of this being spread by means of the various species of Anopheles mosquito which is fairly prevalent throughout Australia.

During 1915 (as malaria had been made a notifiable disease) ten cases were notified, two of these being in Carrington, three in Newcastle, and five in Wickham. All these cases were returned soldiers from Rabaul.

This, however, by no means represents the total of malarial cases in this particular district, as I myself directly and indirectly am aware of at least ten more. In all probability only the severe cases of malaria seek medical advice at all, the others treating themselves on their own advice and that of friends—the last case of self treatment I heard of was applying iodine to his throat as a malarial cure. There was no mortality. Many of the cases notified seemed to be of a fairly severe and recurrent nature.

CEREBRO-SPINAL MENINGITIS.

No cases occurred in the H.R.C.D. during the year.

PLAGUE.

No cases of plague occurred in 1915. The rat infested condition of Newcastle, however, coupled with the increase of plague in the countries to the north and east of Australia is calculated to cause some anxiety.

INFANTILE PARALYSIS.

No cases of the above occurred during the year.

TUBERCULOSIS.

Phthisis Pulmonalis.—This disease was made notifiable in the H.R.C.D. during 1915.

A tuberculosis dispensary was established in Church-street West, with the Hon. J. L. Fegan as secretary, and a committee to supervise it.

No administration is done from the office of the Public Health Department in Newcastle.

Nurse Inspector Fletcher, of this Department, used to attend twice a week to assist the Medical Officer in charge (Dr. W. C. Petherbridge), but on the outbreak of smallpox, as she was urgently required for that work, one of the nurses from the Baby Clinic had to relieve her.

So far as the work of this office goes all practitioners are required to send in a notice of cases and to state whether they wish the said cases to be visited or not.

Should the cases require a visit, Nurse Inspector Fletcher makes the visit and gives full instructions, also leaving pamphlets for the future guidance of the case.

Whenever a patient changes his address a communication is, or should be, sent to this office, and arrangements are then made for the residence to be disinfected, which is also done in the case of a death.

Eleven cases were notified subsequent to the disease being made notifiable, all being in November and December. Four of these were from Cessnock Shire, two from East Maitland, and five from West Maitland.

There were fifty-four deaths from phthisis in the whole District during the year, and nine from other tubercular diseases.

This makes a death rate of 0·48 for phthisis and 0·06 for other tubercular diseases, which is rather an improvement on the years 1911, 1912, and 1914.

The respective death rates for New South Wales were—Phthisis, 0·601, and other tubercular diseases, ·645.

BABY CLINICS.

In February Nurse Mayton and Nurse Spencer reported for duties at the above Institute.

From this time the Hon. J. L. Fegan became secretary and general administrator of the proceedings in connection with the Baby Clinics Dispensary, in Parry-street, Newcastle, and any administration from this office ceased.

Subsequent, however, to the Notification of Births Act coming into force in February in certain parts of the District, namely—Adamstown, Carrington, Hamilton, Lambton, Merewether, Newcastle, New Lambton, Plattsburg, Stockton, Waratah and Wickham, and Wallsend, it became necessary for the doctor, nurse, father, mother or any person attending the patient to notify the birth with particulars to this office within thirty-six hours.

These notifications were entered in a book and the original notifications sent on to the Baby Clinics for the information of the Secretary and the nurses conducting the work.

Nine hundred and seventy-nine notices were received during the year and forwarded for the information of the Baby Clinics. On receipt of these the nurses visit the patient for the purpose of giving advice and distributing pamphlets, &c.

Nurse Mayton was detached from this particular duty for a few days early in the year to open the smallpox wards at Kurri Kurri Hospital, and both Nurse Mayton and Nurse Spencer relieved Nurse Inspector Fletcher from her duties at the Tuberculosis Dispensary when she was urgently required in connection with the smallpox outbreak.

TABLE

TABLE F.

Mortality Table, Hunter River Combined District, for 1915.

Causes of Death.	All Ages.	Under 1 year.	1–4 years	5–14 years	15–19 years.	20–29 years.	30–39 years.	40–49 years.	50–64 years.	65 years and over.	Adamstown.	Carrington.	Greta.	Hamilton.	Lambton.	Maitland, East.	Maitland, West.	Merewether.	Morpeth.	Newcastle.	New Lambton.	Platt-burg.	Raymond Terrace.	Singleton.	Stockton.	Wallsend.	Waratah.	Wickham.	Bolwarra.	Cessnock.	Lake Macquarie.	Port Stephens.	Tarro.	Total.	Deaths in Public Institutions.	Deaths in Public Institutions belonging to outside Districts.
Typhoid Fever	13	...	1	1	1	5	4	...	...	1	...	...	...	...	...	1	1	...	...	5	...	...	...	...	...	3	...	...	...	1	...	...	2	13	12	...
Smallpox	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1	...	...
Measles	19	5	12	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	1	1	...	...	...	1	2	3	...	2	3	...	3	19	1	...
Scarlet Fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Whooping Cough	4	2	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	1	...	...	...	1	...	4	1	...
Diphtheria	13	1	11	1	...	...	...	...	...	...	...	...	...	...	...	...	4	...	...	4	...	...	...	...	...	1	...	...	...	...	...	...	13	8	...
Influenza	5	1	...	...	...	...	...	1	1	2	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	2	...	1	5	...	...
Plague	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Erysipelas	3	...	...	...	...	...	...	1	1	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	1	...	...	...	3	...	...
Other Epidemic Diseases (Dysentery)	8	1	2	...	...	...	...	...	2	3	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...	1	3	...	2	8	...	1
Phthisis	54	...	1	1	6	11	11	11	10	3	2	2	...	2	1	1	4	4	...	11	1	1	...	1	...	3	...	4	...	8	6	1	4	54	9	3
Tubercular Meningitis	3	2	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	3	...	...
Other Tubercular Diseases	6	1	1	...	...	3	...	...	1	...	...	...	...	1	...	1	1	...	...	2	...	...	...	...	...	...	...	1	...	1	...	1	6	2	2
Cancer	74	...	...	...	...	...	3	13	33	25	...	4	1	6	6	1	7	5	...	7	...	1	1	2	2	3	4	6	1	9	5	1	1	74	5	3
Diabetes	6	...	...	1	...	...	1	...	1	3	...	...	...	...	2	...	...	1	...	...	1	...	...	...	...	...	1	...	...	1	...	...	...	6	...	...
Alcoholism	7	...	...	...	...	3	2	...	2	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	1	...	2	1	...	1	7	4	1
Other General Diseases	36	4	3	5	6	1	2	2	6	7	...	1	1	2	1	1	2	...	...	7	...	...	...	...	2	3	1	5	...	5	4	1	1	36	10	2
Meningitis	17	6	7	2	2	...	...	...	...	...	1	...	2	2	...	...	1	1	...	2	...	...	...	...	1	2	...	...	...	3	...	2	...	17	6	...
Cerebro-Spinal Meningitis	3	1	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...	1	...	...	3	...	...
Cerebral Hæmorrhage	46	...	...	...	...	1	...	2	11	32	...	2	1	3	1	...	5	1	...	4	1	...	1	2	1	...	3	5	1	10	4	...	1	46	6	3
Convulsions	18	16	2	...	...	...	...	...	...	...	1	2	...	1	...	...	...	...	...	1	...	1	...	2	...	...	...	1	...	4	4	...	1	18	...	1
Other Diseases of the Nervous System	48	2	4	5	2	4	4	8	9	10	...	1	...	...	1	2	3	1	...	12	...	1	...	...	5	2	...	2	2	10	6	...	1	48	25	...
Diseases of the Heart	142	...	1	3	2	5	5	10	44	72	2	5	2	5	5	6	17	4	4	16	5	1	4	3	2	6	8	7	7	11	11	1	10	142	21	5
Other Diseases of the Circulatory System	35	...	...	...	1	2	...	4	9	19	1	1	...	...	2	2	1	2	1	12	1	1	...	...	...	...	2	3	...	4	1	...	1	35	12	...
Bronchitis	43	10	1	...	...	...	...	1	4	27	1	5	...	2	3	2	1	1	...	5	2	2	5	...	3	...	2	2	1	6	5	...	...	43	1	...
Pneumonia	83	18	23	5	4	7	5	5	9	7	1	2	...	3	2	1	9	1	2	17	...	...	...	3	...	4	5	5	2	14	2	1	6	83	25	3
Other Diseases of the Respiratory System	36	6	6	...	2	5	1	1	3	12	...	1	...	1	3	1	3	...	...	12	1	...	...	...	...	...	1	2	...	5	4	...	2	36	14	...
Diseases of the Stomach	7	2	...	...	...	1	2	...	1	1	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	2	3	...	...	7	2	...
Diarrhœa and Enteritis	161	95	43	3	...	...	1	2	6	11	1	4	...	15	2	2	10	7	1	15	6	3	...	3	4	13	6	16	1	29	9	3	11	161	24	1
Appendicitis	13	...	...	2	2	1	2	3	2	1	...	...	...	...	...	...	2	...	...	8	...	...	...	...	...	1	...	...	...	1	...	...	1	13	12	...
Hernia, Intestinal Obstruction	14	2	...	...	...	...	2	2	4	4	...	1	...	...	...	...	3	...	...	6	...	...	...	...	...	1	...	1	...	1	...	...	...	14	11	...
Cirrhosis of Liver	7	...	...	...	...	...	...	2	3	2	...	...	...	1	...	...	1	...	...	4	...	...	...	...	...	...	...	1	...	...	...	...	...	7	2	...
Peritonitis	3	...	...	...	...	1	1	...	1	...	...	...	...	...	...	...	...	...	...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	3	3	1
Other Diseases of the Digestive System	15	1	2	...	...	...	...	2	3	7	...	...	...	...	...	...	2	1	...	2	...	...	...	...	...	2	1	1	...	1	3	...	2	15	7	...
Bright's Disease (Acute and Chronic)	64	1	3	...	...	3	8	8	21	20	4	2	...	6	...	...	12	...	1	14	1	...	...	...	2	4	3	3	1	6	3	1	1	64	22	...
Other Genito-Urinary Diseases	18	...	...	1	...	...	1	4	2	10	...	1	...	1	1	1	2	...	...	4	...	1	...	...	...	2	...	1	...	2	1	...	1	18	9	...
Puerperal Septicæmia	6	...	...	...	...	3	2	1	...	...	...	...	...	...	...	...	...	...	...	4	...	...	...	...	...	1	...	...	...	1	...	...	...	6	6	...
Other Puerperal Diseases	17	...	...	...	...	11	4	2	...	...	...	...	...	2	...	...	1	1	...	5	...	...	...	1	...	1	1	...	1	...	1	...	2	17	8	...
Prematurity	107	107	...	...	...	...	...	...	...	...	...	5	2	9	4	3	6	3	4	4	...	7	1	2	3	2	6	12	2	23	5	...	4	107	3	...
Developmental Diseases	68	67	1	...	...	...	...	...	...	...	...	3	2	6	3	1	3	2	...	6	1	1	...	3	...	2	4	6	1	8	11	1	4	68	5	...
Senility	92	...	...	...	...	...	...	...	3	89	4	...	...	6	2	2	12	1	1	9	1	2	...	...	2	1	8	6	1	10	15	2	6	92	10	4
Suicide	7	...	...	...	...	...	3	2	1	1	...	...	...	1	...	...	...	...	...	...	...	...	2	...	...	...	...	1	...	2	1	1	...	7	...	...
Accidents	71	7	2	7	9	11	14	5	7	9	...	2	1	...	...	1	8	1	...	11	...	...	1	2	2	5	1	5	4	10	6	2	9	71	26	1
All Other Causes	18	1	1	2	...	1	...	2	5	6	...	1	...	1	...	1	3	...	1	4	...	...	...	...	...	...	...	2	...	...	...	3	2	...	18	4	3
Total	1,411	360	130	43	37	76	79	96	205	385	18	4	12	77	39	32	125	38	15	222	22	23	15	24	30	65	61	100	25	203	122	79	19	1,411	318	34
Births	4,595	...	...	...	...	...	...	...	...	...	86	82	53	364	101	104	288	161	32	342	72	97	29	245	83	95	235	240	85	875	510	69	188	...	...	...

Table F shows the number of deaths in the district for the year ending 31st December, 1915, classified according to diseases, ages, and localities.

The total number of deaths registered during the year was 1,411. Deducting deaths of those who did not belong to the district, this makes a death rate of 10·32, as compared with the rate of 10·57 for New South Wales. There were thirteen deaths from typhoid fever, being a death rate of ·097, as compared with a rate of ·113 for New South Wales.

There were nineteen deaths from measles, being a death rate of ·13, as compared with ·178 for New South Wales.

There were no deaths from scarlet fever, as compared with ·025 for New South Wales.

There were four deaths from whooping-cough, being a death rate of ·097 for the district.

The deaths from diphtheria numbered thirteen, having the same death rate as typhoid fever, namely, ·097, while the death rate for New South Wales was ·146.

Diarrhœa and enteritis caused 161 deaths, being a death rate of 1·28, as compared with ·868 for New South Wales. This is the only case where the death rate of the Hunter River Combined District was higher than the death rate for New South Wales, and this will be commented on later under "Infantile Mortality."

Phthisis caused fifty-four deaths, or a death rate of ·48, while that for New South Wales was ·601.

Other tubercular diseases caused nine deaths, the death rate being ·06, as against ·094 for New South Wales.

Influenza was responsible for five deaths, being a rate of ·0307.

Puerperal septicæmia caused six deaths, and other puerperal diseases seventeen, being a total of twenty-three deaths, causing the death rate in childbirth to be 5·005, while the death rate in childbirth per 1,000 births in the State of New South Wales was 5·143.

The above figures show a very satisfactory condition as regards the health of the Hunter River Combined District in all respects, except in regard to the important item of infantile mortality.

They are also an improvement in nearly all respects on the years 1911, 1912, and 1914, which, with 1913, were the first periods during which the statistics of the district as a whole were dealt with. I am unable to compare with 1913, as material was not available.

Births.—There were 4,595 births in the Hunter River Combined District during 1915, equal to a rate of 34·42 per thousand, as compared with a rate for New South Wales of 28·41.

TABLE

TABLE G.

Mortality Table for the Year 1915.

CAUSES of Infantile Mortality (Deaths of Infants under one year), Hunter River Combined District.

Causes of Death.	Total.	Municipalities.																		Shires.				
		Adamstown.	Carrington.	Greta.	Hamilton.	Lambton.	Maitland, East.	Maitland, West.	Merewether.	Morpeth.	Newcastle.	New Lambton.	Plattsburg.	Raymond Terrace.	Singleton.	Stockton.	Wallsend.	Waratah.	Wickham.	Bolwarra.	Cessnock.	Lake Macquarie.	Port Stephens.	Tarro.
Typhoid Fever	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Smallpox	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Measles	5	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	2	...	...	2	...	...
Scarlet Fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Whooping Cough	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...
Diphtheria	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Influenza	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Plague	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Erysipelas	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Other Epidemic Disease	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Phthisis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Tubercular Meningitis	2	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...
Other Tubercular Diseases	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Cancer	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Diabetes	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Other General Diseases	4	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	2	...	...	...
Meningitis	5	...	...	...	2	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Cerebro-Spinal Meningitis	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Cerebral Hæmorrhage	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Convulsions	16	1	1	...	1	...	...	...	...	1	...	...	1	...	2	...	...	...	1	...	4	4	...	...
Other Diseases of the Nervous System	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...
Diseases of the Heart	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Other Diseases of the Circulatory System	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bronchitis	10	1	1	...	1	2	...	1	...	...	1	...	...	...	...	1	...	...	2	...	...	...	...	...
Pneumonia	18	1	1	...	...	...	1	2	...	2	3	...	...	...	1	...	...	...	...	...	4	...	1	2
Other Diseases of the Respiratory System	6	...	...	...	...	...	...	...	...	...	2	1	...	...	...	...	1	...	...	2	...	...	...	...
Diseases of the Stomach	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
Diarrhœa and Enteritis	95	2	1	1	10	2	2	6	1	1	9	3	1	...	2	1	10	3	11	...	18	3	2	5
Appendicitis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Hernia, Intestinal Obstruction	2	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Peritonitis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Other Diseases of the Digestive System	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
Bright's Disease (Acute and Chronic)	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
Other Gastro-Urinary Diseases	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Prematurity	107	4	5	2	5	4	6	3	3	5	3	...	7	1	2	4	1	6	12	10	15	4	...	4
Developmental Diseases	67	...	3	2	6	3	1	3	1	1	6	1	1	...	3	...	2	4	6	1	8	10	1	4
Accidents	7	...	...	...	...	...	...	...	1	...	1	...	...	1	...	...	...	...	...	1	2	...	1	...
All other causes	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
Total	357	10	12	5	26	12	11	16	6	11	26	6	10	2	10	6	14	14	36	14	58	29	5	12

Infantile Mortality.—This is usually expressed in terms of the number of infants under one year of age per 1,000 registered births, and deals with the number of infants dying before the completion of the first year of life.

There were 330 infants who died before attaining one year of age, which makes a death rate of 77·06 for the Hunter River Combined District, as compared with a mortality of 68·13 for New South Wales; that is, the combined district exceeded the death rate for New South Wales by 8·83, and it would seem that the infantile mortality rate has for many years been higher than the rate for New South Wales.

As the rest of the district statistics show a very fair standard of health, it is a little difficult to understand why the infantile mortality rate should be higher, unless mining districts are liable to higher rates than other districts.

Deaths in Institutions.—There were 318 deaths occurring in the different public Institutions of the district during the year 1915, and of these 34 were deaths of persons from outside the districts.

DAIRIES.

During the year thirty-seven dairies within twelve municipal districts were inspected and reported on to the different Local Authorities, and a copy of each report sent on to the Health Department, Sydney.

In addition to the dairies situated in the municipal districts, sixty-three registered dairies situated in the Newcastle Police District were inspected and reported on by Sanitary Inspector G. H. Godfrey (Ass. Roy. San. Inst., Lond.), whilst the District Dairy Inspector (Mr. W. Mackie) inspected and reported on the 404 dairy premises in the Maitland Police District, and 379 premises in the Raymond Terrace Police District.

These inspections are really carried out from this office in order to test the efficiency of Local Authorities in carrying out the administration of the Dairies Supervision Act in my district.

The

The following table will show the classification of the different dairies as to good or fair, and also will show the number of cattle examined and those destroyed as diseased.

TABLE H.

Districts.	Total Number of Dairies.	General State.		Total Number of Cattle.	Number Destroyed.			
		Good.	Fair.		Tuberculosis.	Actinomycosis.	Cancer.	Other Diseases.
Adamstown	4	2	2	24	.....	.....	.....	.....
Greta	6	6	.....	47	.....	.....	.....	.....
Hamilton	3	3	.....	25	.....	1	.....	.....
Lambton	1	1	.....	7	.....	.....	.....	.....
Maitland, East	20	11	9	340	1	.....	1	.....
†Maitland, West	.....	.....	.....	450	1	.....	.....	.....
Merewether	3	3	.....	21	.....	.....	.....	.....
Morpeth	4	3	1	20	.....	.....	.....	.....
*Newcastle	1	.....	1	.....	.....	.....	.....	.....
New Lambton	2	2	.....	54	.....	.....	.....	.....
Plattsburg	5	5	.....	52	.....	.....	.....	.....
Raymond Terrace	11	1	.....	4	.....	.....	.....	.....
†Singleton	.....	.....	.....	.....	.....	.....	.....	.....
Wallsend	4	4	.....	31	.....	1	.....	.....
Waratah	3	3	.....	42	.....	.....	.....	.....
Police.								
Maitland (portion of)	404	302	100	10,471	43	7	1	1
Newcastle	162	150	12	3,052	4	2	3	.....
Raymond Terrace (portion of)	379	260	117	8,910	49	8	7	1

* Registration cancelled. † Not inspected on account of variola outbreak occupying attention.

NOXIOUS TRADES.

The Noxious Trades Act was extended to this district in 1901. The table appended shows the number of different kinds of business carried on in the various districts during the year 1915.

TABLE I.

Districts.	Fat Extractors.	Pig Keepers.	Rag Picker.
Municipal.			
Adamstown	1	2	.....
Carrington	.....	.....	.....
Greta	1	1	.....
Hamilton	.....	.....	.....
Maitland, West	1	1	.....
Merewether	.....	1	.....
New Lambton	3	3	.....
Waratah	1	3	.....
Wickham	.....	.....	1
Wallsend	.....	1	.....
Plattsburg	2	2	.....
Shires.			
Bolwarra	4	4	.....
Cessnock	21	21	.....
Lake Macquarie	12	12	.....
Port Stephens	5	5	.....
Tarro	15	13	.....
	66	69	1

At the extension of the Act to this district in 1901 there were seventy-two licenses issued, compared with the 136 in 1915.

Eight of the pig-keepers also carry on poultry farming in connection with pig-keeping.

All the above noxious trades premises have been visited at intervals during the year, and reports forwarded to the Local Authorities concerned, and also to the Health Department, Sydney, pointing out any improvements necessary.

PROSECUTIONS UNDERTAKEN BY THE LOCAL AUTHORITIES DURING THE YEAR 1915 AS REGARDS PUBLIC HEALTH MATTERS.

The Local Authorities in my district have the power to enforce Public Health matters under the undermentioned Acts:—Poor Food Act, Public Health Act, Dairies Supervision Act, Noxious Trades Act, Cattle Slaughtering Act, and the following Local Government Ordinances:—39 (Public Health), 45 (Pans and Closets, &c.), 56 (Meat), 57 (Fish and Game).

When the Pure Food Act came into operation, the Board of Health by circular, requested the Local Authorities in my district to nominate an officer who would be appointed an Inspector under the Pure Food Act to carry out certain sections of that Act in regard to the taking of samples of milk for analysis and enforcing cleanliness of premises where foodstuffs are prepared or sold or stored for sale. All the Municipal Sanitary Inspectors, except two, were appointed as officers under the Pure Food Act.

TABLE J.

LIST of Prosecutions undertaken by Local Authorities during 1915 in matters regarding the Public Health.

District.	Pure Food.	Public Health.	Dairy Supervision.	Noxious Trades.	Cattle Slaughtering Act.	Ord. 39.	Ord. 45.	Ord. 56.	Ord. 57.	Fines and Costs.
										£ s. d.
Adamstown	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
Carrington	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,
Greta	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,
Hamilton	4	,,	,,	,,	,,	3	,,	,,	,,	33 12 0
Lambton	Nil	,,	,,	,,	,,	2	,,	,,	,,	2 2 0
Maitland, East	,,	,,	1	,,	,,	Nil	1	,,	,,	0 6 0
Maitland, West	6	,,	Nil	,,	,,	,,	Nil	,,	,,	13 16 0
Merewether	Nil	,,	,,	,,	,,	,,	,,	,,	,,	Nil
Morpeth	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,
Newcastle	,,	,,	1	,,	...	1	,,	,,	,,	2 9 0
New Lambton	,,	,,	Nil	,,	,,	Nil	,,	,,	,,	Nil
Plattsburg	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,
Raymond Terrace	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,
Singleton	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,
Stockton	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,
Wallsend	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,
Waratah	,,	1	,,	,,	,,	4	,,	,,	3	9 7 0
Wickham	,,	Nil	,,	,,	,,	Nil	,,	,,	Nil	Nil
Shires.										
Bolwarra	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,
Cessnock	,,	,,	,,	1	,,	4	,,	,,	1	9 6 0
Lake Macquarie	,,	,,	,,	Nil	,,	Nil	,,	,,	Nil	Nil
Port Stephens	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,
Tarro	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,

The above table shows that the Councils do not seem to have availed themselves of these powers, as in the whole of the eighteen municipal districts the only prosecutions reported are from East Maitland (2), West Maitland (7), Newcastle (2), Waratah (8), and Cessnock Shire (5) for the whole year.

No samples of milk were taken for analysis by any of the Local Authorities during the year.

It would certainly seem that the Local Authorities of a city of some 15,000 people should have taken some action under this most important section, and more especially as the work of the Department's Inspectors show that constant and strict supervision is necessary at all times.

Table J also shows that the only prosecutions undertaken by Municipal Councils and Shire Councils under the Pure Food Act were by Hamilton and West Maitland.

Referring to the above, it may be mentioned that there is a strong tendency on the part of Local Authorities to shelve on to the officials of Health Department most of the work which would entail a prosecution. During the year I have been requested on several occasions to inspect premises in order that action might be taken under the Public Health Act when the same could easily have been undertaken by the Local Authorities under their own Ordinances.

In these circumstances I have always endeavoured to encourage the Local Authorities to carry out what may be considered their own work and so avoid adding unnecessarily to the work of an understaffed office.

PURE FOOD ACT.

Owing to the outbreak of Variola, Sanitary Inspector Godfrey's time was taken up in another direction, consequently Departmental Inspectors from Sydney made periodical visits to my district and visited premises where food was prepared, and also took samples of milk from various traders. The results of their activities are shown in the following tables:—

TABLE

TABLE K.

Milk Samples.

Number.	Warnings.	Prosecutions.	Fines and Costs.
212	.....	13	£ s. d. 43 18 0

Food and Drug Samples.

Number.	Warnings.	Prosecutions.	Fines and Costs.
93	.....	4	£ s. d. 17 4 0

TABLE L.

Premises—Inspections and Prosecutions.

Number Inspected.	Prosecutions.	Fines and Costs.
145	4	£ s. d. 12 4 0

Slaughtering Premises and Meat Inspection.—There were twelve premises licensed during the year ending 1915 in the municipal districts, and fifty premises licensed in the Shire areas. In the Abattoir Area, which extends to a radius of 14 miles from the Newcastle Post Office, there were forty-six licenses issued in respect of twenty-six premises, which is accounted for by the fact that three or, perhaps, four butchers may kill at the one slaughter-house, although each must have a separate license to kill. All of these seventy-one slaughter-houses were inspected and reported on to the Local Authorities concerned as to their efficiency. Generally speaking, the premises were found in a clean condition.

The following table shows the number of animals slaughtered for human food in the licensed slaughter-houses in the district during the year 1915.

TABLE M.

Municipalities.	Bullocks.	Calves.	Cows.	Pigs.	Sheep.
Adamstown	62	82	602	97	1,869
Greta	74	2	202	36	636
Maitland, West	261	.....	155	50	590
New Lambton	592	143	928	238	6,006
Plattsburg	706	241	813	457	6,448
Waratah	1,394	620	2,279	1,462	19,470
Newcastle Wharf	.....	.....	.....	157	.....
Shires.					
Bolwarra	215	5	753	100	824
Cessnock	3,195	521	2,177	2,917	19,987
Lake Macquarie	3,127	1,715	5,873	6,316	41,122
Port Stephens	70	52	1,119	189	2,082
Tarro	4,823	6,478	4,846	3,978	57,294
	14,519	9,859	19,747	15,997	136,348

In that part of my district which is part of the Abattoir Area, and called for convenience the Meat Inspection Area, which consists of sixteen slaughter-houses, there are three Meat Inspectors employed by the Department of Public Health. The number of animals killed and examined, and the totals condemned for disease and other conditions by these Inspectors, are set out in the table below.

Outside of the inspection area in the district the present system of meat inspection is far from satisfactory. It consists in the occasional visit to the killing house of an officer of the Local Authority of the district in which the slaughtering premises are placed.

The following table shows the number of animals (cattle and swine) killed and the number of carcases condemned as diseased and unfit for food at the slaughter-houses in the Newcastle Meat Inspection District and those at the slaughter-houses in the remaining portions of the Hunter River Combined District during the year 1915.:—

TABLE

TABLE N.

	Numbers Slaughtered.		Condemned as Diseased.			
			Numbers.		Percentage.	
	Cattle.	Swine.	Cattle.	Swine.	Cattle.	Swine.
Newcastle Meat Inspection District	25,935	7,341	188	44	·72	·59
All other parts of the Hunter River Combined District	12,897	8,499	54	11	·41	·13

The above table shows a marked difference in the condemnations made in that part of the district where the three whole-time Meat Inspectors are employed, compared with the figures for the remainder of the district where a very imperfect system of meat inspection is carried out.

In addition to the whole carcases which were condemned for disease in the Meat Inspection Area, as set out in the above table, the following parts of carcases were also condemned as unfit for food:—97 bullocks' heads, 83 cows' heads, 215 pigs' heads, 1 calf's head, and 24 cattle for emaciation.

In the other parts of the district we have no record of any parts of animals condemned during the year.

Abattoir.—The building of the abattoirs for the Newcastle District was started during the year, and it is hoped by the Board to have same completed and ready for use about March, 1916.

PROMOTION OF EFFICIENCY OF PUBLIC HEALTH WORK IN THE HUNTER RIVER COMBINED DISTRICT.

Referring to the above I have to report that certain advances were made during the year 1915.

About the middle of the year an additional adjacent office was secured, and is utilised for accommodating members of my staff.

Staff.—As the only way to keep a district, and especially one of this size, up to the mark in sanitary matters is constant inspection and re-inspection, it would be advisable that an additional qualified Sanitary Inspector should be attached to this office.

Streets.—In investigating premises there is a great loss of time in finding them—more than can possibly be credited—and I would again suggest that:—

1. All municipalities not having names to their streets, such as is the case at Pittown (Wallsend Municipality), should be requested to give names to their streets and number the houses.
2. Municipalities having named streets and no numbers should be requested to number the houses.
3. District Registrars should be instructed to obtain the accurate address of the persons who come to them to register.

Notification of Infectious Diseases.—Medical practitioners and Local Authorities should be periodically reminded of their duties and responsibilities under the Public Health Act, Part 3, Section 29, and especially in regard to Pulmonary Tuberculosis under the Public Health (Amendment) Act, 1915.

Disinfection.—This should be more satisfactorily carried out and the householder eliminated as a disinfector.

The uninstructed cannot satisfactorily carry out what is a scientific operation which even many Sanitary Inspectors do not perform too satisfactorily.

At the present moment it is difficult to give any satisfactory information in regard to the general disinfection done, but the Councils might be requested to furnish information as to the number and nature of the disinfections done during the year.

Typhoid Investigation Form.—Suggestions for improving this have been made on page 17.

Phthisis.—As mentioned on page 31 the Tuberculosis Dispensary is in full action, Phthisis having been made a notifiable disease for the Hunter River Combined District, which was mentioned by me as being very advisable in the report for 1914.

Vital Statistics.—Although forms for Monthly Returns were sent out to all the District Registrars, it cannot be said that the information required has been returned in a very satisfactory or workable way.

Some of the Registrars returned the forms and some did not, and it seems almost impossible to get this done in a way which can be of any practical use.

As the Government Statistician has, however, kindly agreed to send quarterly or an annual return of Deaths and their Causes in the Hunter River Combined District, the dealing with Statistics will be very much facilitated.

Local Authorities.—Table J, page 104, shows that Local Authorities are not as energetic as desirable (which is putting it very moderately) in the discharge of their duties

duties as regards health matters. There is little doubt that the tendency of these Authorities, as in nearly all others I have come across in my experience of health work, is to leave most things to the Public Health Department.

There are many reasons why this should be the case, and all these reasons show that the whole Public Health Administration should be in the hands of the State Public Health Department.

Much greater promptness should be shown in replying to inquiries from the Health Department than is usually the case. In many instances, after waiting perhaps a week for a reply to a simple question, a reminder has to be given and sometimes an interview is necessary.

Dairies.—There is also a very important matter which seems to me should be taken into consideration. At the present time there is no standard for an Inspectorto adhere to as regards the constructions of milking bails and milk rooms, consequently each Inspector may have a different idea as regards what is necessary. Would it not be better for the Department to issue a plan and specification of a milking bail and milk room so that a uniform plan of action could be arranged for between the proprietor and the Department, and the amount loaned (with interest, of course).

Hospitals.—Experience gained in connection with hospitals both here and as Medical Inspector for North Queensland (where there was a Health Territory of over 200,000 square miles) leads me to the conclusion that the greatest efficiency is gained, and the most thorough efficiency maintained, where the staff are not recruited locally, but are appointed from places not in the district.

The reasons for this are very much the same as those for the Health Department having the direct authority and supervision on all health matters.

Experience has also shown that a large number of local Hospital Committees show a very strong tendency to ask and defer to the opinions of anyone excepting their Medical Staff.

It would be very advisable if these Committees could be impressed with the idea that the opinions of the Medical Staff in regard to hospital general affairs is of some value outside purely medical and surgical questions, and that the said staff have the interests of the patients and hospital just as much at heart as what may be called the subordinate staff and the Hospital Committee.

Tuberculosis Dispensary.—It might be advisable (when things get settled down after the war) to have the Throat and Chest Dispensary open in the evening, to enable men and women to come for treatment who state that they are unable to attend unless they sacrifice half a day's work. At the same time it must be noted that these people, generally speaking, do not seem to hesitate to lose "half a day's work" if the matter it is lost for is one of pleasure—as races, for instance.

Enthetic Diseases.—As Newcastle, being a seaport, is more than usually liable to these diseases, it would be much benefited by a dispensary being opened for them.

It might also be well (after the war) that this clinic should be open in the evening for the treatment of men, women, and children for such diseases.

Bacteriological Laboratory.—The Laboratory requires thoroughly refitting before it can be satisfactorily used for the required work.

This would probably have been done before now but for the war intervening.

Departmental Rooms.—These require generally overhauling and certain office additions made to render them efficient for the required work. It is understood that this will be done in due course.

I have, &c.,

J. BOOTH-CLARKSON,
D.P.H., D.T.M.H., Camb., &c.,
Acting Medical Officer of Health, Hunter River Combined District.

INDEX TO CHARTS FOR REPORT.

1915.

CHART 1.—Diagram showing the monthly prevalence of typhoid fever and the incidence of this disease at different age-periods during 1915, and the preceding year.

CHART 2.—Notifications from diphtheria and deaths (shaded portion of columns) during 1915, and in the preceding year, in the Hunter River Combined District.

CHART 3.—General death rate per 1,000 of the population in Newcastle and suburbs for year 1915, and the preceding year.

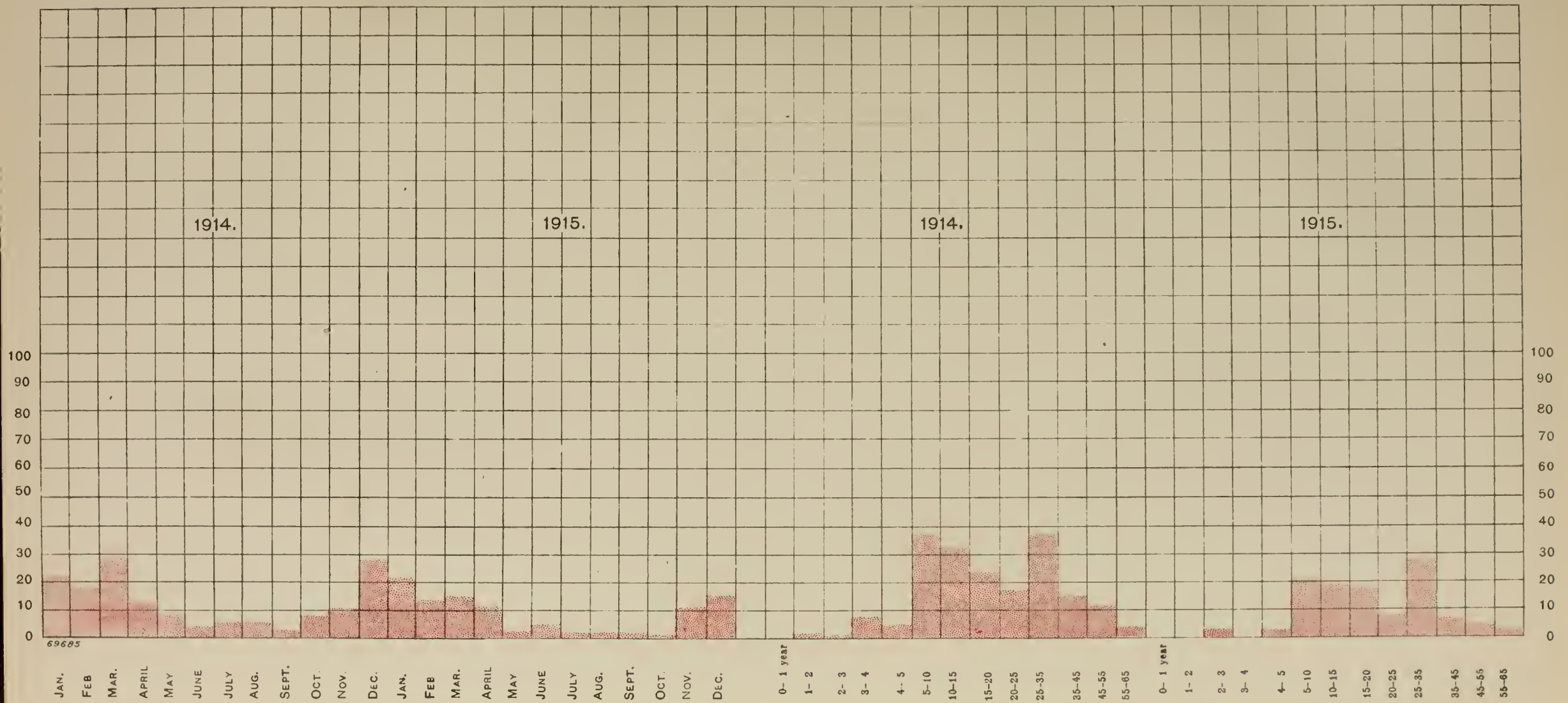
CHART 4.—Chart showing death rate per 1,000 of the population from diarrhœa, typhoid fever and diphtheria in Newcastle and suburbs for year 1915, and the preceding year.

CHART 5.—Diagrams showing the compared death rates from diarrhœa and typhoid, and the general death rate of West Maitland and the Hunter River Combined District, showing how the West Maitland death rate has decreased since cesspits were gradually done away with.

PART III.

Chart I.

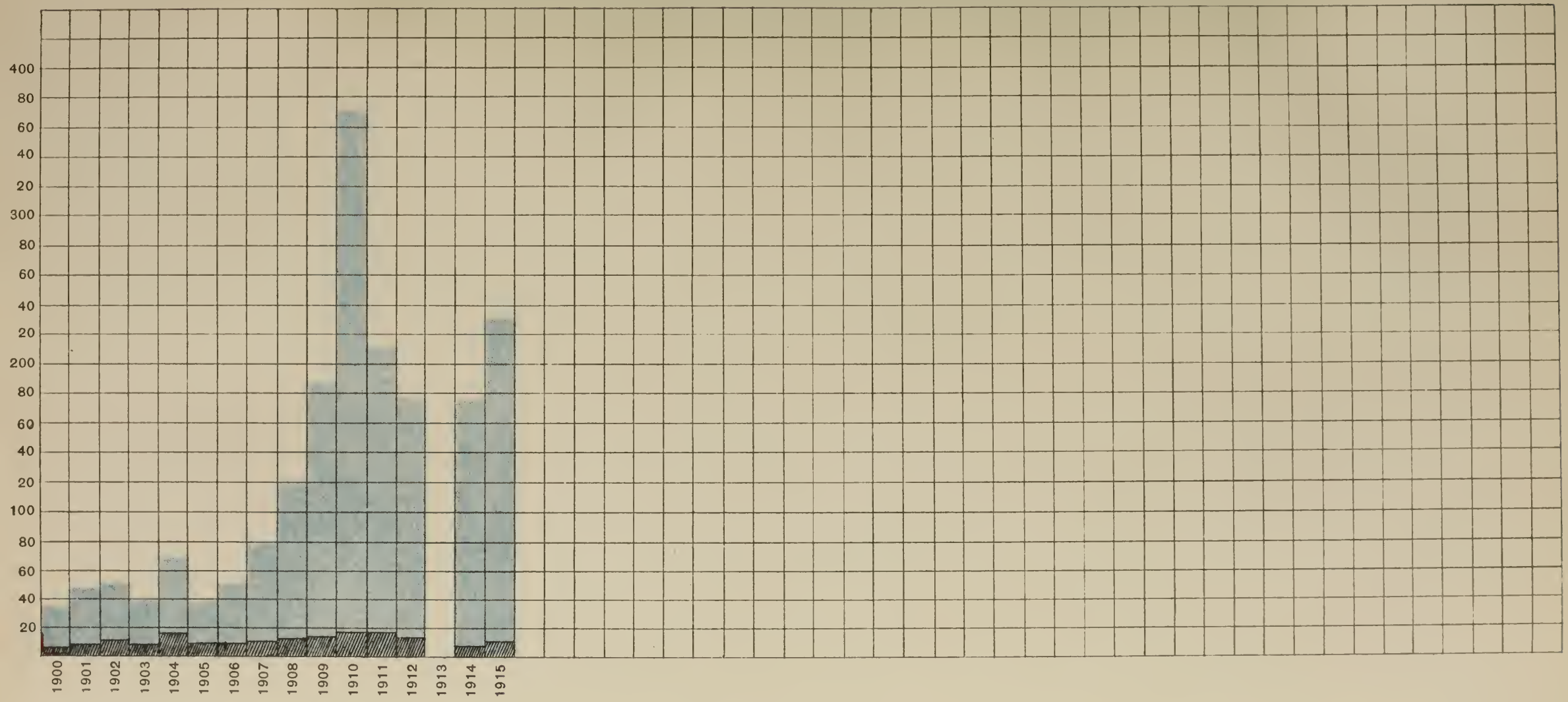
Diagram showing the Monthly prevalence of Typhoid Fever and the incidence of this disease at different age-periods during 1914-1915.



Stuart Library
Agnes Scott College
Decatur, Georgia

Chart II.

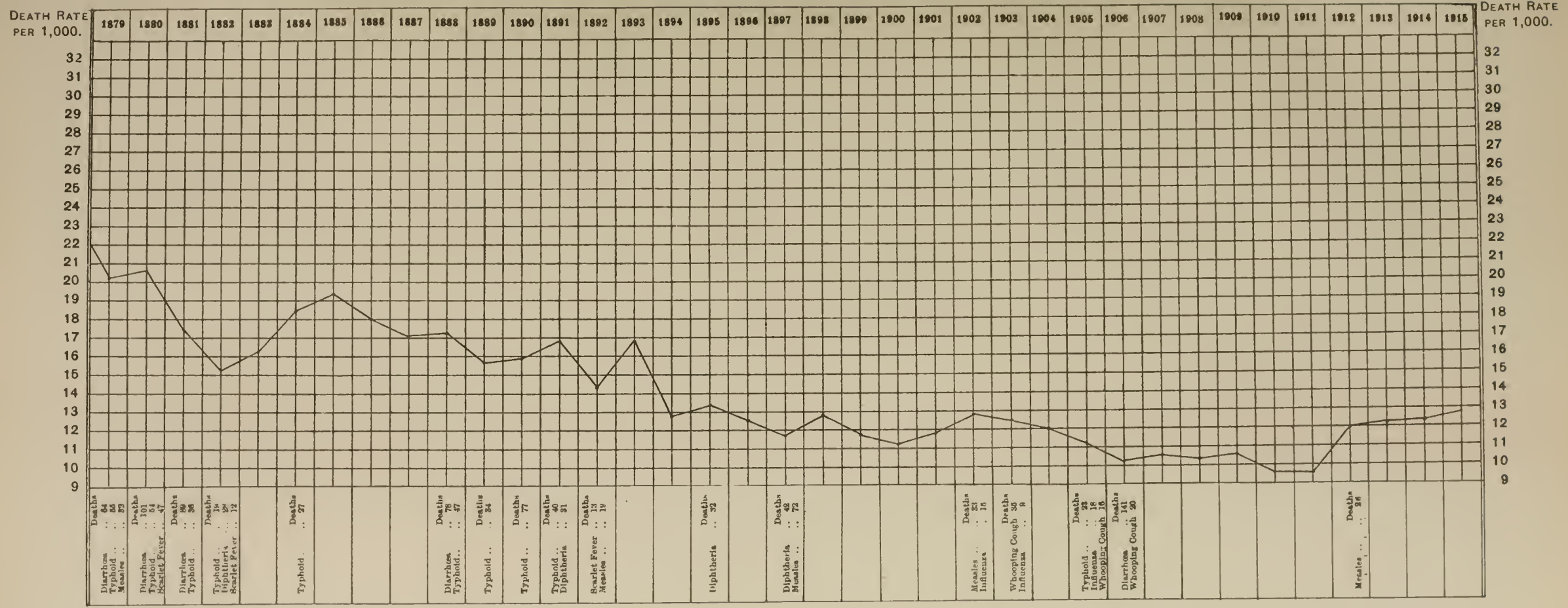
Notifications from Diphtheria and Deaths (shaded portion of columns) during 1900-1915, in the Hunter River Combined Districts.



LIBRARY
OF THE
UNIVERSITY OF ILLINOIS

Chart III.

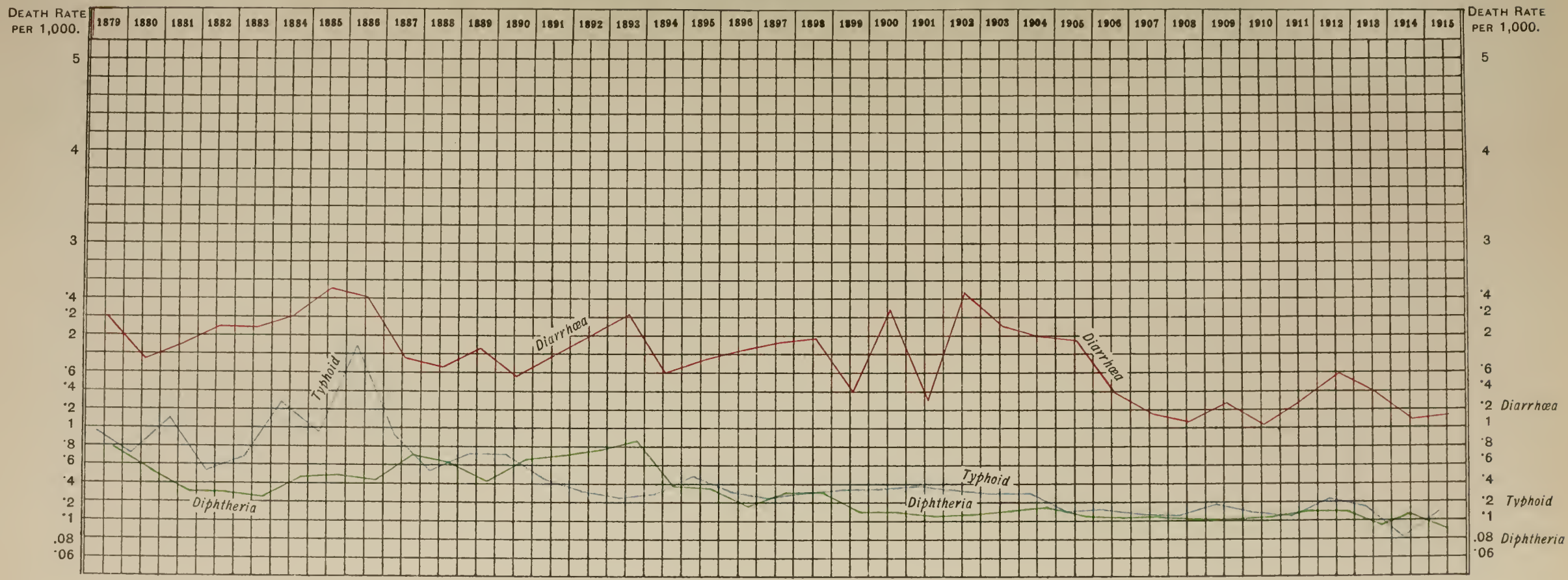
General Death Rate per 1,000 of the population in Newcastle and Suburbs for years 1879-1915.



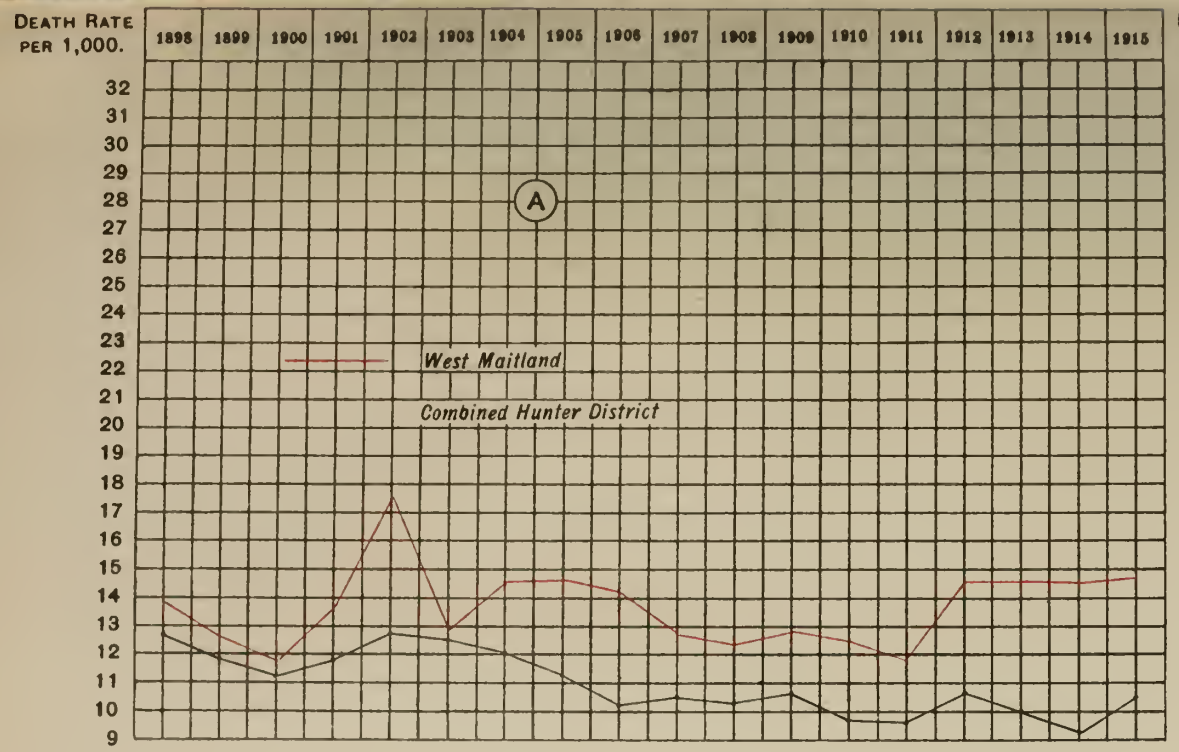
LIBRARY
OF THE
UNIVERSITY OF ILLINOIS

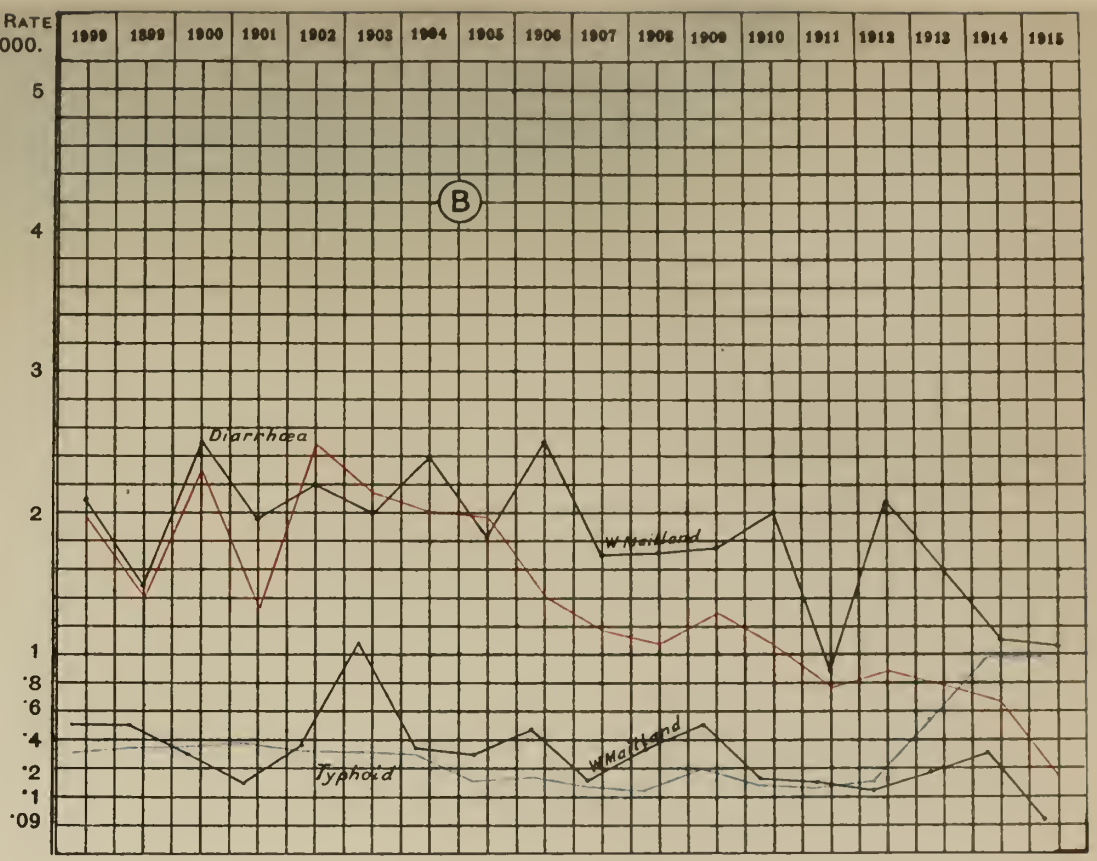
Chart IV.

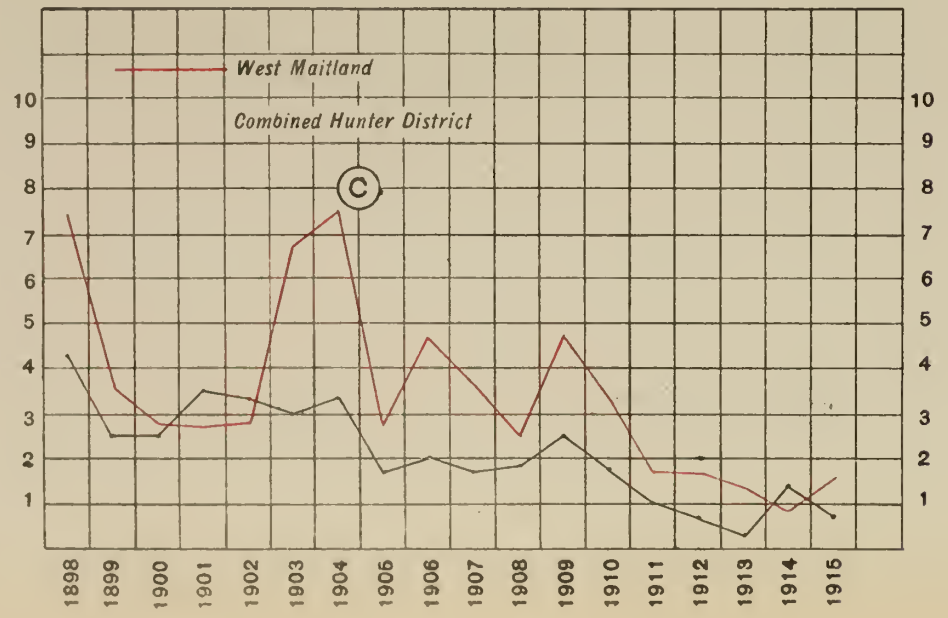
Chart showing Death Rate per 1,000 of the Population from Diarrhœa, Typhoid Fever, and Diphtheria in Newcastle and Suburbs for years 1879-1915.



LIBRARY
OF THE
UNIVERSITY OF ILLINOIS







A—Death Rates in West Maitland and Hunter River Combined District per 1,000 of population.

B—Death Rate from Diarrhœa and Typhoid Fever in West Maitland and Hunter River Combined District per 1,000 of population.

C—Attack Rate from Typhoid Fever in West Maitland and Hunter River Combined District per 1,000 of population.

LIBRARY
OF THE
UNIVERSITY OF ILLINOIS

UNIVERSITY OF ILLINOIS LIBRARY
FEB 1 - 1922

PART III.

Report on the Outbreak of Mild Small-pox in New South Wales, 1913-15.

Part III.

OUTBREAK OF MILD SMALLPOX IN NEW SOUTH WALES, 1913–1915.

By W. G. Armstrong, M.B., Ch. M. (Syd.), D.P.H. (Camb.), Senior Medical Officer of Health for New South Wales.

The outbreak of mild smallpox, which began in 1913 and lasted throughout 1914, continued into the year 1915 and until the end of the year. But its local incidence changed. Hitherto most of the cases had been in the Metropolitan area, and only a minority had occurred in all other parts of the State. During 1915 but few persons in the Metropolitan area were affected, and the Hunter River district bore the brunt of the outbreak. Out of the total number of 471 persons attacked during the year, 411 resided in the Hunter River district; only 41 in the Metropolitan area; and 19 in all other parts of the State. Among those patients residing outside the Hunter River district, infection could be traced directly to Newcastle in, at least, 13 instances.

The type of disease did not vary from that observed in 1913 and 1914. It continued extremely mild in its manifestations. No deaths were recorded in which smallpox was either a primary or secondary (contributory) cause.

Metropolitan patients continued to be treated at the Quarantine Station, North Head, until 25th March. After that date no more smallpox patients were sent to the Quarantine Station. The remaining cases, numbering seventeen in all, which occurred during the year in the Metropolis were removed for treatment to the Coast Hospital at Little Bay.

The management of the epidemic in the Hunter River district was entrusted to Dr. Booth-Clarkson, the Acting Medical Officer of Health for the district. Early in the year a large number of miners in the coal-mines of Cessnock, Kurri Kurri, and the surrounding district became infected, and these patients were treated in the isolation block of the Kurri Kurri District Hospital. Temporary additions were made to the hospital in order to provide the necessary accommodation, and a special nursing staff was detailed by this Department and installed in charge of the isolation block. By 10th August the epidemic at Cessnock began to decline; and as cases were beginning to occur with some frequency in Newcastle, the Kurri Kurri Hospital was closed for smallpox. The isolation hospital at Stockton, which had been disused for some months was reopened, and the special nursing staff transferred there from the Kurri Kurri Hospital as well as the five smallpox patients remaining in the latter institution. Between 10th August and 31st December, 342 persons suffering from smallpox were treated in the Stockton Isolation Hospital.

The demand for vaccination was poor throughout the year. Only 10,159 persons were recorded as having been vaccinated, and most of those were contacts of smallpox cases, inmates of Government Asylums, and charitable institutions, and prospective travellers to the Pacific Islands. All the above classes of persons were vaccinated compulsorily; voluntary vaccination, except in Newcastle during one portion of the year, was almost a dead-letter. The vaccine used by the Department throughout the year was obtained from the Hastings Vaccine Station, New Zealand. It continued to give satisfactory results.

No country outbreaks of any importance occurred during 1915 outside the area included within the Hunter River Sanitary District. Exclusive of that district and the Metropolitan area, the greatest number of cases in any one locality was at Gloucester, a small town 90 miles north of Newcastle on the North Coast Railway. Six persons were attacked here during November and December, five of whom were members of one family.

TABLE showing the Number of Persons ascertained to be suffering from Smallpox during each week of 1915.

Cases recorded to	January	3	1	Cases recorded to	July	4	6
,,	,,	10	2	,,	,,	11	3
,,	,,	17	Nil.	,,	,,	18	3
,,	,,	24	5	,,	,,	25	3
,,	,,	31	Nil.	,,	August	1	4
,,	February	7	1	,,	,,	8	3
,,	,,	14	24	,,	,,	15	2
,,	,,	21	9	,,	,,	22	1
,,	,,	28	5	,,	,,	29	9
,,	March	7	7	,,	September	5	12
,,	,,	14	6	,,	,,	12	13
,,	,,	21	3	,,	,,	19	5
,,	,,	28	2	,,	,,	26	22
,,	April	4	Nil.	,,	October	3	25
,,	,,	11	Nil.	,,	,,	10	32
,,	,,	18	2	,,	,,	17	37
,,	,,	25	1	,,	,,	24	26
,,	May	2	Nil.	,,	,,	31	35
,,	,,	9	Nil.	,,	November	7	22
,,	,,	16	Nil.	,,	,,	14	39
,,	,,	23	Nil.	,,	,,	21	19
,,	,,	30	2	,,	,,	28	8
,,	June	6	Nil.	,,	December	5	11
,,	,,	13	1	,,	,,	12	18
,,	,,	20	2	,,	,,	19	18
,,	,,	27	9	,,	,,	26	7
				,,	,,	31	6
					Total		471

TABLE showing the Distribution of Cases of Smallpox occurring in the Metropolitan District during 1915.

Municipalities—		Municipalities—*continued*—	
City of Sydney	8	Parramatta	2
Auburn	1	Petersham	2
Balmain	1	Prospect and Sherwood	5
Burwood	3	Redfern	1
Erskineville	1	Willoughby	1
Granville	1	Waterloo	2
Liverpool	2	Woollahra	1
Marrickville	1	Hornsby Shire	2
Newtown	5	Port Jackson	1
North Sydney	1	Total	41

TABLE showing the Distribution of Cases of Smallpox occurring in the Hunter River District during 1915.

Municipalities—		Municipalities—*continued*—	
Adamstown	18	New Lambton	31
Carrington	6	Stockton	1
Greta	6	Wallsend	35
Hamilton	63	Wickham	60
Lambton	14	Waratah	5
Morpeth	1	West Maitland	2
Merewether	9		
Newcastle	47	Total	298
Shires—		**Shires—*continued*—**	
Cessnock	98	Port Stephens	2
Lake Macquarie	11	Tarro	2
		Total	113

TABLE showing the Distribution of Cases of Smallpox occurring in Country Districts.

Municipalities—		Shires—	
Bega	1	Blacktown (Rooty Hill)	2
Goulburn	1	Gloucester S. (Gloucester)	6
Scone	4	Manning S. (Cundletown)	3
		Patrick's Plains (Wittingham)	1
Total	6	Tamarang (Werris Creek)	1
		Total	19

TABLE showing Number of Attacks, under Sexes and Age-groups.

Age-group ...	—1		—5		—10		—20		—30		—40		—50		—60		Over 60		Total.		Age not stated.	
Sex. ..	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Attacks ...	8	13	18	20	23	10	49	32	110	66	38	31	21	5	11	5	2	5	280	187	3	1

Total number of attacks, 471.

PART IV.

Report upon the State Hospitals and Asylums under the Control of the Director-General of Public Health.

		Page.
1.	Coast Hospital, Little Bay	128
2.	Leprosy in New South Wales (25th Annual Report)	142
3.	David Berry Hospital	153
4.	Lady Edeline Hospital for Babies, "Greycliffe," Vaucluse	158
5.	Strickland Convalescent Home for Women, "Carrara," Rose Bay	162
6.	Convalescent Hospital for Men, "Denistone House," Eastwood	163
7.	State Sanatorium for Consumptives, Waterfall	164
8.	Rookwood State Hospital and Asylum, Lidcombe	168
9.	Liverpool State Hospital and Asylum	173
10.	Newington State Hospital and Asylum	177
11.	State Asylum for Aged and Infirm Men, George-street, Parramatta	182
12.	State Asylum for the Blind and Men Suffering from Defective Sight and Senility, Macquarie-street, Parramatta	183
13.	Cottage Homes for Aged Couples, Parramatta	185
14.	Statistical Summary	186

PART IV.

REPORT upon the State Hospitals under the control of the Director-General of Public Health.

I.—THE COAST HOSPITAL, LITTLE BAY, SYDNEY.

REPORT FOR THE YEAR 1915.

The Acting Medical Superintendent to The Director-General of Public Health.

The Coast Hospital, Sydney, 1916.

Sir,

I have the honor to submit the following Report on the working of the Coast Hospital during the year 1915.

Staff.

Honorary Physicians.—Alfred Walter Campbell, M.B., M.S., M.D. (Edin.); James Macdonald Gill, M.D. (Lond.), L.R.C.P. (Lond.), M.R.C.S. (Eng.).

Honorary Surgeons.—Charles Percy Barlee Clubbe, L.R.C.P. (Lond.), M.R.C.S.E. (Eng.); Sir Herbert Lethington Maitland, M.B., M.S.; George Henry Abbott, M.B., M.S.; Hon. John Brady Nash, M.D., M.S. (Edin.), M.R.C.S. (Eng.), M.L.C.

Honorary Gynæcologists.—Ralph Worrall, M.D., M.S. (Ire.); Hugh Corbet Taylor Young, M.B., M.D. (Glas.).

Honorary Ophthalmic.—Charles Gordon McLeod, M.D., M.B. (Edin.).

Resident Medical Staff.

Medical Superintendent.—Reginald Jeffery Millard, M.B., D.P.H. (on leave with Australian Expeditionary Forces).

Assistant Medical Officers.—Donald Wallace, M.A., M.B., Ch.M.; Thomas Maynard Furber *, M.B., Ch.M.; James A. James *, M.B.; Thomas J. Frizell*, M.B.

(* On leave with Expeditionary Forces.)

Senior Assistant Superintendent.—R. Goldrick.

Matron.—A. Watson.

Dispenser.—Miss M. W. Fitz-Gibbon.

Clerk and Storekeeper.—W. Dwyer.

2. *Statistics.*—Detailed tables of statistics will be found in the Appendix, but I may summarise here the more important of these.

I.—The following table is a comparative general statement for 1915 and the previous year :—

	1914.	1915.
Remaining in Hospital on 31st December	408	424
Admitted during the year	4,033	4,806
Total cases under treatment during the year	4,336	5,214
Discharges, including deaths	3,928	4,790
Deaths	149	198
Death-rate per cent. of total discharges	3·81	4·13
Average daily number of occupied beds	373·11	440
Average stay of patients (in days)	32·35	30·9

For the year, the number of admissions was 773 more than in 1914; and the average daily number of occupied beds was 440, as against 373·11 in 1914. The average stay of patients decreased from 32·35 days to 30·9 days.

II. *Infectious Diseases.*—The following Table summarises the work of the year in regard to these, and affords a comparison with 1914. In this Table the "cases" are cases treated until discharge or death, and the fatality is reckoned on the total cases treated. Cases remaining in hospital on 31st December, 1915, are not included in these figures for the year.

	1914.			1915.		
	Cases.	Deaths.	Fatality.	Cases.	Deaths.	Fatality.
Typhoid Fever	73	12	16·43	104	10	9·6
Scarlet Fever	628	7	1·11	1,228	19	1·5
Diphtheria	977	10	1·02	940	35	3·7
Measles	82	1	1·21	359	2	·5
Whooping-cough	36	4	11·11	4	...	...
Erysipelas	34	1	2·94	50	8	·16
Mumps	20	...	...	...	...	...
Variola	6	...	...	14	...	...

Typhoid Fever.—The number of cases under treatment was more than in 1914; the fatality was less.

Scarlet Fever.—Was more prevalent than in 1914—4,726 cases being notified in the whole Metropolitan area during 1915 as against 1,801 during 1914, and the cases treated at the Coast Hospital showed a corresponding increase. There were 19 deaths, 13 of which occurred within seven days after admission.

Diphtheria.—In the Metropolis the cases notified amounted to 2,551 in 1915, as against 2,244 in 1914, and the cases treated at the Coast Hospital were 995 as against 1,057 in 1914. The percentage of notified cases which came to this hospital for treatment was—in 1914, 47·10 per cent.; and in 1915, 39 per cent. Of the 35 fatal cases, 16 died within seven days of admission. Intubation was performed on 29 patients, and tracheotomy on 16.

Antitoxin was administered in the hospital to 1,049 cases. In view of the prevailing diversity of opinion as to the appropriate dosage of Antitoxin, it may be of interest to record briefly the amounts used here, which were as follows :—

Antitoxin.	Cases.	Percentage of Total Cases.	Antitoxin.	Cases.	Percentage of Total Cases.
2,000 units	40	3·8	32,000 units	.....	.....
4,000 „	248	23·6	34,000 „	1	·09
6,000 „	173	16·4	36,000 „	.....	.....
8,000 „	201	19·1	38,000 „	.....	.....
10,000 „	139	13·2	40,000 „	10	·9
12,000 „	76	7·2	44,000 „	.....	.....
14,000 „	16	1·5	50,000 „	.....	.....
16,000 „	25	2·4	60,000 „	2	·1
18,000 „	2	·1	70,000 „	1	·09
20,000 „	91	8·6	80,000 „	.....	.....
22,000 „	.....	.....	90,000 „	.....	.....
24,000 „	13	1·2	120,000 „	.....	.....
26,000 „	2	·1	130,000 „	.....	.....
28,000 „	.....	.....	140,000 „	.....	.....
30,000 „	8	·7			

Altogether 2,725 cases of scarlet fever, diphtheria, measles, and whooping-cough were treated in the Infectious Division, as against 1,913 cases in 1914. In the Appendix will be found further details concerning these cases, viz. :—

Table VI.—Number of cases of diphtheria, scarlet fever, and typhoid fever notified within the Metropolis, and the percentage of these cases admitted to the Coast Hospital in each of the years 1898–1915 inclusive.

Table IV.—Typhoid fever. Age and sex distribution.

Table V.—Diphtheria. Age and sex distribution.

Table VIII.—Fortnightly admissions of cases of typhoid fever, scarlet fever, diphtheria, and measles.

Table VII.—Duration of stay in hospital of cases of typhoid fever, scarlet fever, and diphtheria.

Table XIII.—Cases of infectious disease admitted, and deaths from the several diseases, for each year since 1884.

The average daily number of occupied beds in 1914 was 373·11. In 1915 the number rose to 440—an increase of about 67.

69685—I

3. *Expenditure.*—The cost during the year 1914 was £27,749 6s. 7d. In 1915 it was £30,483 4s. 8d.—an increase of £2,773 18s. 1d. This increased cost arose from having to provide for the maintenance expenses of 67 additional beds.

Occupied beds.—The average daily number of occupied beds in 1914 was 373. In 1915 the number rose to 440—an increase of 67.

Cost per occupied bed.—The average cost per occupied bed in 1913 was £87 6s. 6d. In 1914 it was £74 7s. 5d.—a reduction of £12 19s. 1d. per occupied bed. In 1915 it was £69 5s. 7d.—a further reduction of £5 1s. 10s. per occupied bed.

Table XI gives a detailed statement of the working expenses in 1915.

Receipts.—The revenue and other collections in the year 1913 amounted to £695 0s. 8d., in 1914 to £1,530 18s. 4d., and in 1915 to £2,321 19s. 4d.

4. *Nursing.*—Miss Watson continued as Matron. Instruction by lectures and demonstrations was, as usual, given to the Nurses by the Medical Staff and Matron; and in invalid cookery by a specially engaged teacher (Miss K. Harriott), as in former years. Examinations were held in accordance with regulations, with the following results :—

First-year examination	...	...	...	...	...	29
Second-year ,,	...	...	...	...	...	23
Third-year ,,	...	...	...	...	...	20
Fourth-year ,,	...	...	...	...	...	14

During the year 12 certificated nurses left the hospital to take up private nursing.

Sick leave was granted to 66 nurses, amounting in the aggregate to 2,470 days. Of these nurses some were ill on more than one occasion, there being 92 cases of illness altogether. Of the nurses sick 1 had typhoid fever 56 days, 19 had diphtheria 824 days, 6 had scarlet fever 257 days, and 13 had measles 137 days. With the exception of Nurse Spencer, who I regret to state died from enteric fever, the others recovered satisfactorily.

5. *Laboratory.*—The following Table summarises the work done in the hospital laboratory month by month. In all, 8,378 diphtheria cultures were examined. The practice was continued of accepting no diphtheria culture as negative unless found so after forty-eight hours' incubation.

	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
Diphtheria cultures :—													
1. Examined after 12–24 hours' incubation	628	569	825	712	861	826	865	855	800	789	708	723	9,161
2. After further 24 hours' incubation	...	...	...	...	...	...	...	...	...	...	...	...	...
Negative for K.L. at first examination, and re-examined	489	411	671	535	608	540	509	621	557	609	515	563	6,628
Of these, found positive at second examination	71	68	104	80	104	89	92	124	118	110	69	107	1,136
Percentage	14·4	16·3	17·3	15·0	17·1	16·4	18·0	19·8	21·1	18·0	11·4	19·0	17·0
Sputum for Tubercle	6	1	...	6	3	3	3	2	1	6	4	7	42
Leprosy smears	...	8	...	...	4	...	...	...	4	...	...	...	16
Gonorrhœal smears	7	7	2	4	...	4	6	1	2	2	4	6	45
Widal tests	...	...	...	...	...	...	...	...	...	...	...	...	...
Leucocyte counts	...	...	...	...	...	...	...	1	...	...	...	...	1
Blood culture	2	...	...	...	...	...	...	...	...	...	...	...	2
Vaccines prepared	...	...	...	...	...	...	...	...	...	...	...	...	...
Blood examinations	...	...	2	6	4	1	...	1	...	2	4	4	24
Urine for casts, &c.	18	2	...	5	...	2	5	1	...	3	2	3	41
Urine for Tubercle bacilli	...	...	...	...	...	...	...	...	...	...	...	...	...
Smears for B. Pestis	...	...	...	...	...	...	...	...	...	...	...	...	...
Cultures for B. Pestis	...	...	...	...	...	...	...	...	...	...	...	...	...
Sundry examinations	2	...	...	1	5	...	1	...	2	1	3	2	17
Smears for Spirochætes	...	...	...	...	...	...	...	...	...	...	...	...	...
Smears for K.L. Throat	2	...	...	...	...	...	...	...	...	...	...	...	2

6. *Additions, Alterations, &c.*—The principal works carried out during the year 1915 by the hospital staff, were the following :—

i. Erection of buildings in the Infectious Division to accommodate 55 extra beds.

ii. The general renovation of Wards III, IV, V, VI, VII, VIII, IX and X, the female staff quarters, nurses' quarters, laundry, main kitchen, and Lecture Hall in the General Division.

iii. Improvements made to gardens and lawns, and the clearing and grassing of scrub land.

iv. The repair of roads.

I have, &c.,

DONALD WALLACE,
Acting Medical Superintendent.

APPENDIX.

APPENDIX.

TABLE I.—General Statement of the working of the Hospital from 1st January to 31st December, 1915.

	Males.	Females.	Total.
Number of beds available in the General Division on 31st December, 1915	114	59	169
,, ,, Infectious Division	.....	.....	238
,, ,, Nurses' Sick Room	.....	.....	4
Total accommodation	.....	.....	411
Number of inmates remaining in hospital on 31st December, 1914	246	162	408
,, admitted during the year 1915	2,626	2,180	4,806
Total treated	2,872	2,342	5,214
Discharged—Cured	1,844	1,936	3,780
,, Relieved	642	108	750
,, Unrelieved	30	32	62
Died	110	88	198
Total number discharged, or who died	2,626	2,164	4,790
Remaining in hospital on 31st December, 1915	246	178	424

Average daily number resident	440
Average residence of discharged patients in days	30·9
Rate of mortality on total number who were discharged or who died	4·13
Total cost of maintenance and treatment of indoor patients	£30,483 4s. 8d.
Average cost of patients per annum	£69 5s. 7d.

	Males.	Females.	Total.	Total Visits.
Outdoor relief— Total number of individuals who received relief	575	580	1,155	2,220

Total cost of Outdoor Relief ..... £55 4s. 0d.

Hospital Staff on 31st December, 1915.

Medical and Administrative.	Number.	Nursing.	Number.	General.	Number.
Medical Superintendent	1	Sub-Matron	1	Artisans	7
Assistant Medical Officer	3	Sisters	6	Attendants, Out-door	7
Senior Assistant Superintendent	1	Housekeeper	1	,,	9
Matron	1	Probationers	54	Telephone attendant	1
Dispenser	1	Pupil Nurses	48	Male Cooks	3
Clerks	3	Wardsmen	7	Female Cooks	3
				,, Servants	15
Total	10		117	Laundresses	8
				Needlewoman	1
					54
				Total Staff	181

TABLE II.—Return showing the number of Wards, together with the cubic space and number of beds in each Ward, in the General and Infectious Divisions of the Coast Hospital for the year 1915.

Ward.	Cubic Space.	No. of Beds.	Cubic space per Bed.	Ward.	Cubic Space.	No. of Beds.	Cubic space per Bed.
1	32,100	33	972	11	22,320	24	930
B	10,800	14	771	12	23,880	25	955
2	10,368	12	864	13	28,236	44	641
3	12,000	10	1,200	14	43,520	71	613
4	12,900	11	1,172	15	28,296	28	1,010
5	31,368	25	1,254	16	11,520	16	720
6	10,800	8	1,350	17	16,915	30	563
7	10,800	8	1,350	Nurses' Sick Room	3,456	4	864
8	32,268	24	1,344				
9	12,000	12	1,000	Total	366,447	411	28,648
10	12,900	12	1,075				

TABLE III.—Diseases other than Infectious—Discharges and Deaths during 1915, distributed under sex and age.

Age.	0–5		6–10		11–15		16–20		21–30		31–40		41–50		51–60		61–70		71–80		81–90		91–100		Total.	
Sex.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Cases treated.	82	82	35	33	29	25	133	54	542	190	230	88	132	57	174	42	96	18	17	6	7	1	1	1	1,495	586
Deaths. ...	14	18	...	1	...	...	1	2	13	8	11	3	15	6	17	5	7	3	...	1	...	...	...	...	75	49

Mortality, 5·95 per cent.

TABLE IV.—Typhoid Fever—Discharges and Deaths during 1915, distributed under sex and age.

Age.	0–5		6–10		11–15		16–20		21–30		31–40		41–50		51–60		61–70		71–80		81–90		Total.	
Sex.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Cases treated...	4	5	5	6	5	8	9	7	17	21	6	2	5	1	...	1	1	1	...	...	...	...	52	52
Deaths	...	1	...	...	...	...	3	1	...	3	1	1	...	...	...	...	...	...	...	...	...	...	4	6

Mortality, 9·62 per cent.

TABLE V.—Ages and Sexes of Diphtheria cases.

	Male.	Female.		Male.	Female.
Under 1 year	11	4	20–24 years	35	47
1 year.....	35	30	25–29 ,, ...	11	41
2 years	51	38	30–34 ,, ...	8	10
3 ,, ...	46	35	35–39 ,, ...	8	10
4 ,, ...	41	46	40–44 ,, ...	3	4
			45–49 ,, ...	.....	1
Total under 5 years ...	184	153	50–54 ,, ...	1	1
			55–59 ,, ...	.....	.....
5–9 years.....	103	160	60 years and over	2	.....
10–14 years	39	75			
15–19 ,, ...	12	32	Total	406	534

TABLE VI.—Showing Number of Cases of Diphtheria, Scarlet Fever, and Typhoid Fever notified within the Metropolis, and the percentage of these cases treated at the Coast Hospital, in each of the years 1898–1915 inclusive.

	1898.	1899.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914.	1915.
Diphtheria.																		
Cases notified in Metropolis	613	285	278	439	393	690	738	695	659	659	880	1,144	2,109	1,834	2,632	2,045	2,244	2,551
,, treated at Coast Hospital.	27	25	7	65	64	92	301	313	267	389	360	500	909	974	1,284	994	1,057	940
Percentage.....	4·40	8·77	2·51	14·80	16·30	13·33	40·80	45·03	40·51	59·03	40·91	43·70	43·10	53·10	48·7	48·6	47·10	36·85
Scarlet Fever.																		
Cases notified in Metropolis	2,425	556	464	884	1,253	2,910	1,361	1,136	1,869	976	1,153	836	394	369	304	555	1,801	4,726
,, treated at Coast Hospital.	350	134	116	150	313	585	371	284	503	336	420	339	150	134	108	287	715	1,224
Percentage.....	14·43	24·10	25·00	16·96	24·98	20·10	27·26	25·00	27·45	34·43	36·43	40·55	38·07	36·31	35·5	51·71	39·70	25·9
Typhoid Fever.																		
Cases notified in Metropolis	824	786	983	829	610	833	665	561	485	505	678	700	812	488	535	566	644	821
,, treated at Coast Hospital.	163	148	247	214	144	166	178	139	84	101	118	96	85	66	67	77	81	104
Percentage.....	19·78	18·83	25·12	25·81	23·60	19·93	26·77	24·77	17·32	20·00	17·40	13·71	10·46	13·52	12·5	13·78	12·58	12·67

TABLE VII.—Duration of Stay of cases of Typhoid Fever, Scarlet Fever, and Diphtheria.

Duration of Stay.	Typhoid Fever.			Scarlet Fever.			Diphtheria.		
	Cured.	Died.	Total.	Cured.	Died.	Total.	Cured.	Died.	Total.
1 week or less	.....	3	3	4	13	17	43	16	59
1— 2 weeks ...	2	1	3	27	4	31	112	8	120
2— 3 ,, ...	1	2	3	89	2	91	157	.....	157
3— 4 ,, ...	6	1	7	451	.....	451	189	2	191
4— 5 ,, ...	5	.....	5	324	.....	324	129	2	131
5— 6 ,, ...	11	.....	11	139	.....	139	93	2	95
6— 7 ,, ...	22	1	23	88	.....	88	46	1	47
7— 8 ,, ...	20	1	21	13	.....	13	38	2	40
8— 9 ,, ...	8	.....	8	17	.....	17	17	1	18
9—10 ,, ...	3	.....	3	13	.....	13	21	1	22
10—11 ,, ...	5	.....	5	10	.....	10	14	.....	14
11—12 ,, ...	4	1	5	7	.....	7	12	.....	12
12—13 ,, ...	.....	.....	.....	3	.....	3	7	.....	7
13—14 ,, ...	5	.....	5	5	.....	5	9	.....	9
14—15 ,, ...	.....	.....	.....	3	.....	3	7	.....	7
15—16 ,, ...	2	.....	2	4	.....	4	3	.....	3
16—17 ,, ...	.....	.....	.....	1	.....	1	.....	.....	.....
17—18 ,, ...	.....	.....	.....	1	.....	1	1	.....	1
18—19 ,, ...	.....	.....	.....	2	.....	2	1	.....	1
19—20 ,, ...	.....	.....	.....	1	.....	1	.....	.....	.....
20—21 ,, ...	.....	.....	.....	.....	.....	.....	3	.....	3
21—22 ,, ...	.....	.....	.....	1	.....	1	.....	.....	.....
22—23 ,, ...	.....	.....	.....	.....	.....	.....	.....	.....	.....
23—24 ,, ...	.....	.....	.....	.....	.....	.....	.....	.....	.....
24—25 ,, ...	.....	.....	.....	1	.....	1	.....	.....	.....
30—31 ,, ...	.....	.....	.....	1	.....	1	3	.....	3
	94	10	104	1,205	19	1,224	905	35	940

TABLE VIII.—Fortnightly Admissions of cases of Typhoid Fever, Scarlet Fever, Diphtheria, and Measles, 1915.

	Fortnight ending—																									
	Jan.		Feb.		March.		April.		May.		June.		July.			August.		Sept.		Oct.		Nov.		December.			Total.
	14	28	11	25	11	25	8	22	6	20	3	17	1	15	29	12	26	9	23	7	21	4	18	2	16	31	
Typhoid Fever...	2	18	17	4	2	2	5	16	8	4	2	7	4	...	2	...	...	3	1	...	1	...	3	15	1	6	123
Scarlet Fever.....	48	42	52	48	61	60	51	66	58	31	42	60	57	39	49	25	40	47	31	33	68	44	28	49	76	65	1,279
Diphtheria	27	38	29	33	30	47	43	55	40	47	50	24	38	27	36	34	23	33	46	25	26	29	34	31	37	49	925
Measles.....	3	2	4	2	3	0	0	6	0	2	2	8	17	23	29	34	34	30	32	20	32	26	12	13	2	3	357

TABLE IX.—Return of the Number of Persons under Treatment, the Order of Disease for which they were treated, and the Number of Deaths in each Order during the year 1915. (Includes cases remaining in Hospital on 31st December, 1915.)

	Discharged during the year.				Remaining in on 31st December, 1915.	Total.
	Cured.	Relieved.	Un-relieved.	Died.		
CLASS I.—GENERAL DISEASES.						
Typhoid Fever	94	.....	.....	10	19	123
Malaria	.....	5	.....	.....	1	6
Smallpox	13	.....	1	.....	8	22
Measles	355	2	.....	2	2	361
Scarlet Fever	1,203	2	.....	19	141	1,365
Whooping-cough	4	.....	.....	.....	.....	4
Diphtheria	896	9	.....	35	55	995
Influenza	23	.....	.....	.....	.....	23
Leprosy	.....	.....	2	.....	.....	2
Carcinoma	.....	.....	1	.....	.....	1
Erysipelas	40	1	1	8	.....	50
Mumps and Other Epidemic Diseases	11	1	.....	.....	3	15
Purulent Infection and Septicæmia	.....	.....	.....	.....	.....	.....
Sarcoma of Thigh	.....	.....	.....	1	.....	1
Carcinoma of Uterus	.....	1	.....	.....	.....	1
Beriberi	1	.....	.....	1	.....	2
Epithelioma of Hand, &c	3	.....	.....	.....	.....	3
Lipoma	1	.....	.....	.....	.....	1
Tuberculosis of the Lungs	.....	.....	.....	2	.....	2
Tuberculosis Abdominal	.....	.....	.....	1	.....	1
Pott's Disease	.....	.....	.....	.....	2	2
Tubercular Disease of Bone	6	16	.....	1	6	29
Tuberculosis of other organs	1	.....	.....	.....	1	2
	2,651	37	5	80	238	3,011

TABLE IX.—Return of the Number of Persons under Treatment, &c.—*continued.*

	Discharged during the year.				Remaining in on 31st December, 1915.	Total.
	Cured.	Relieved.	Un-relieved.	Died.		
CLASS 1.—GENERAL DISEASES—*continued.*						
Morphia Habit	.....	.....	.....	.....	1	1
White Swellings	.....	1	.....	.....	.....	1
General Tuberculosis	.....	.....	.....	1	3	4
Chloroma	.....	.....	1	.....	.....	1
Syphilis—						
Primary	7	94	.....	.....	3	104
Secondary	.....	103	.....	.....	9	112
Tertiary	.....	31	2	.....	7	40
Hereditary	.....	.....	.....	.....	.....	.....
Soft Chancre	6	1	.....	.....	.....	7
Gonorrhœal Diseases	171	95	4	.....	17	287
Cancer, &c., of the Mouth	.....	2	1	2	1	6
Cancer, &c., of the Stomach and Liver	.....	1	1	4	1	7
Cancer, &c., of the Peritoneum, the Intestines, and the Rectum	1	.....	.....	.....	.....	1
Cancer, &c., of the Female Genital Organs	1	.....	.....	.....	.....	1
Cancer, &c., of the Breast	2	.....	1	.....	.....	3
Cancer of Skin	.....	.....	.....	.....	1	1
Cancer, &c., of other Organs	.....	.....	.....	2	.....	2
Cancer of Uterus	.....	1	1	1	.....	3
Acute Rheumatism	29	7	1	.....	5	42
Chronic Rheumatism and Gout	9	16	.....	.....	4	29
Diabetes	.....	1	.....	.....	.....	1
Exophthalmic Goitre	1	2	.....	1	.....	4
Cerebral Tumours	.....	1	.....	.....	.....	1
Anæmia, Chlorosis	1	2	1	2	.....	6
Fibroma of Leg, &c.	2	1	.....	.....	.....	3
Ptomaine Poisoning	2	.....	.....	.....	.....	2
Lead Poisoning	.....	1	.....	.....	.....	1
Phthisis	.....	11	1	8	.....	20
Alcoholism, Acute and Chronic	2	3	.....	3	.....	8
Total, Class 1	234	374	14	24	52	698
CLASS 2.—DISEASES OF THE NERVOUS SYSTEM AND OF THE ORGANS OF SPECIAL SENSE.						
Tabes Dorsalis	.....	5	1	.....	.....	6
Other Diseases of the Spinal Cord	.....	1	.....	5	.....	6
Cerebral Hæmorrhage	.....	4	.....	4	1	9
Paralysis without indicated cause	.....	1	.....	2	.....	3
Other forms of Mental Alienation	.....	.....	.....	.....	.....	.....
Dementia	.....	.....	2	.....	.....	2
Cerebral Anæmia	1	.....	.....	.....	.....	1
Chorea	.....	1	1	.....	.....	2
Hysteria	1	3	.....	.....	.....	4
Neuralgia and Neuritis	8	6	2	.....	5	21
Other diseases of the Nervous System	4	4	.....	.....	.....	8
Hemiplegia	1	.....	2	.....	.....	3
Diseases of the Eye and Adnexa	7	1	.....	.....	1	9
Total, Class 2	22	26	8	11	7	74
CLASS 3.—DISEASES OF THE CIRCULATORY SYSTEM.						
Acute Endocarditis	.....	.....	.....	.....	3	3
Aneurism	.....	3	.....	.....	.....	3
Organic Diseases of the Heart	10	8	.....	12	.....	30
Diseases of the Arteries, Atheroma, &c.	.....	.....	.....	.....	1	1
Embolism and Thrombosis	2	.....	.....	.....	.....	2
Stokes Adams Disease	.....	1	.....	.....	.....	1
Diseases of the Veins (Varices, Varicose Ulcer, Hæmorrhoids)	99	3	2	.....	8	112
Diseases of the Lymphatic System	1	.....	.....	.....	.....	1
Hæmorrhage	.....	.....	.....	.....	1	1
Total, Class 3	112	15	2	12	13	154
CLASS 4.—DISEASES OF THE RESPIRATORY SYSTEM.						
Diseases of the Nasal Fossæ	.....	1	.....	.....	.....	1
Epistaxis	1	.....	.....	.....	.....	1
Diseases of the Larynx	5	.....	.....	.....	.....	5
Diseases of the Thyroid Body	2	.....	.....	.....	.....	2
Acute Bronchitis	41	6	.....	1	1	49
Chronic Bronchitis	7	8	.....	.....	1	16
Broncho-Pneumonia	28	.....	.....	18	4	50
Pneumonia	39	1	.....	10	1	51
Pleurisy	15	.....	.....	.....	.....	15
Rhinitis	1	.....	.....	.....	.....	1
Asthma	2	2	2	1	1	8
Other Diseases of Respiratory System	4	2	1	1	1	9
Total, Class 4	145	20	3	31	9	208

TABLE IX.—Return of the Number of Persons under Treatment, &c.—*continued.*

	Discharged during the year.				Remaining in on 31st December, 1915.	Total.
	Cured.	Relieved.	Un-relieved.	Died.		
CLASS 5.—DISEASES OF THE DIGESTIVE SYSTEM						
Diseases of the Teeth and Gums	3	1	.....	.....	.....	4
Diseases of the Mouth and its associated organs	4	1	.....	.....	.....	5
Diseases of the Pharynx	110	2	1	.....	4	117
Ulcer of the Stomach	2	1	.....	.....	.....	3
Other Diseases of the Stomach (Cancer excluded)	39	4	.....	11	.....	54
Ankylostomiasis	1	.....	.....	.....	.....	1
Diarrhœa and Enteritis (children under two years of age only)	5	3	.....	.....	1	9
Diarrhœa and Enteritis (children over two years and adults)	18	.....	.....	.....	.....	18
Intestinal parasites	1	.....	.....	.....	.....	1
Appendicitis	45	3	1	.....	4	53
Hernia, Intestinal Obstruction	71	5	10	3	6	95
Other Diseases of the Intestines	16	4	.....	1	2	23
Diseases of the Anus and Fæcal Fistulæ	8	3	.....	.....	.....	11
Hydatid Tumours of the Liver	1	.....	.....	1	.....	2
Cirrhosis of the Liver		3	.....	5	.....	9
Biliary Calculi	1	.....	.....	.....	1	2
Biliary Calculi, Cholecystitis	.....	.....	.....	.....	.....	1
Simple Peritonitis (non-puerperal)	4	2	.....	3	1	10
Hydatid (Undefined)	1	1	.....	.....	.....	2
Other Diseases of Digestive System	4	1	.....	.....	.....	5
Total, Class 5	336	34	12	24	19	425
CLASS 6.—DISEASES OF THE GENITO-URINARY SYSTEM AND ADNEXA.						
Acute Nephritis	.....	6	.....	7	.....	13
Bright's Disease	.....	6	1	.....	.....	7
Chyluria	.....	.....	.....	.....	.....	.....
Other Diseases of the Kidneys and their Adnexa.	3	1	.....	.....	1	5
Calculi of the Urinary Passages	.....	.....	.....	.....	.....	.....
Diseases of the Bladder	17	6	1	.....	1	25
Other Diseases of the Urethra, Urinary Abscess, &c.	2	8	.....	.....	.....	10
Diseases of the Prostate	.....	4	.....	1	.....	5
Non-venereal Diseases of the Male Genital Organs	18	5	1	.....	2	26
Metritis	5	1	.....	.....	.....	6
Uterine Hæmorrhage (non-puerperal)	.....	.....	.....	.....	.....	.....
Uterine Tumour (non-cancerous)	.....	.....	.....	.....	.....	.....
Other Diseases of the Uterus	11	3	7	1	1	23
Cysts and other Ovarian Tumours	2	.....	.....	.....	.....	2
Other Diseases of the Female Genital Organs	14	7	.....	.....	5	26
Non-puerperal Diseases of the Breast (Cancer excepted)	1	1	.....	.....	.....	2
Total, Class 6	73	48	10	9	10	150
CLASS 7.—PUERPERAL CONDITION.						
Accidents of Pregnancy	43	2	2	.....	1	48
Traumatic Neuritis	1	.....	.....	.....	.....	1
Puerperal Septicæmia	1	.....	.....	2	.....	3
Puerperal Phlegmasia alba dolens	.....	.....	.....	.....	.....	.....
Subinvolution of Uterus	1	.....	.....	.....	.....	1
Pelvic Abscess	1	.....	.....	.....	.....	1
Thrombosis of Leg	1	.....	.....	.....	.....	1
Puerperal Hæmorrhage	.....	.....	.....	.....	.....	.....
Following Childbirth not defined	1	.....	.....	.....	.....	1
Total, Class 7	49	2	2	2	1	56
CLASS 8.—DISEASES OF THE SKIN AND OF THE CELLULAR TISSUE.						
Gangrene	1	.....	.....	1	.....	2
Carbuncle	1	1	.....	1	.....	3
Phlegmon, Acute Abscess	14	4	.....	.....	1	19
Other Diseases of the Skin and Adnexa	46	14	1	.....	3	64
Furunculosis	.....	1	.....	.....	.....	1
T.B. Sinus of R. Groin	.....	1	.....	.....	.....	1
Elephantiasis	.....	.....	.....	.....	2	2
Total, Class 8	62	21	1	2	6	92

TABLE IX.—Return of the Number of Persons under Treatment, &c.—*continued.*

	Discharged during the year.				Remaining in on 31st December, 1915.	Total.
	Cured.	Relieved.	Un-relieved.	Died.		
CLASS 9.—DISEASES OF THE ORGANS OF LOCOMOTION.						
Non-tuberculous Diseases of the Bones	28	21	.....	.....	4	53
Arthritis and other Diseases of the Joints (Tuberculosis and Rheumatism excepted)	.....	1	.....	.....	1	2
Other Diseases of the Organs of Locomotion	5	1	.....	.....	1	7
Total, Class 9	33	23	.....	.....	6	62
CLASS 10.—MALFORMATION.						
Congenital Malformation	4	1	1	.....	.....	6
Total, Class 10	4	1	1	.....	.....	6
CLASS 11.—INFANCY.						
Newly-born Infants leaving Hospital, &c., without having been ill	.....	.....	.....	.....	.....	.....
Congenital Debility of Children	.....	.....	.....	.....	.....	.....
Other Diseases Peculiar to Early Infancy	2	.....	.....	.....	.....	2
Total, Class 11	2	.....	.....	.....	.....	2
CLASS 12.—OLD AGE.						
Senile Debility	.....	137	.....	.....	60	197
Total, Class 12	.....	137	.....	.....	60	197
CLASS 13.—VIOLENCE.						
Scalds	3	1	.....	.....	.....	4
Crushed Hand	.....	.....	.....	.....	.....	.....
Poisoning	.....	.....	.....	1	.....	1
Bite of Snake or Insect	3	.....	.....	.....	.....	3
Firearms Accidents	.....	1	.....	.....	.....	1
Cutting Instruments	2	.....	.....	.....	.....	2
Burning by Fire	4	.....	.....	.....	2	6
Falls	3	3	.....	.....	.....	6
Machines	.....	2	.....	.....	.....	2
Railways and Tramways	1	.....	.....	.....	1	2
Injury by Vehicles and Horses	2	.....	.....	.....	.....	2
Injuries by Animals	.....	.....	.....	.....	.....	.....
Starvation	.....	.....	.....	.....	.....	.....
Other injuries	.....	.....	.....	.....	.....	.....
Fractures	13	1	2	.....	.....	16
Dislocations	.....	.....	.....	.....	.....	.....
Sprains	.....	.....	.....	.....	.....	.....
Total, Class 13	31	8	2	1	3	45
CLASS 14.—ILL-DEFINED DISEASES.						
Ill-defined Organic Diseases	26	4	2	2	.....	34
Unspecified or ill-defined Causes	.....	.....	.....	.....	.....	.....
Heart Failure	.....	.....	.....	.....	.....	.....
No Disease	.....	.....	.....	.....	.....	.....
Total, Class 14	26	4	2	2	.....	34
SUMMARY.						
Total, Class 1.—General Diseases	2,885	411	19	104	290	3,709
,, 2.—Diseases of the Nervous System and of the Organs of Special Sense	22	26	8	11	7	74
,, 3.—Diseases of the Circulatory System	112	15	2	12	13	154
,, 4.—Diseases of the Respiratory System	145	20	3	31	9	208
,, 5.—Diseases of the Digestive Organs	336	34	12	24	19	425
,, 6.—Diseases of the Genito-Urinary System and Adnexa	73	48	10	9	10	150
,, 7.—Puerperal Condition	49	2	2	2	1	56
,, 8.—Diseases of the Skin and of the Cellular Tissue	62	21	1	2	6	92
,, 9.—Diseases of the Organs of Locomotion	33	23	.....	.....	6	62
,, 10.—Malformation	4	1	1	.....	.....	6
,, 11.—Infancy	2	.....	.....	.....	.....	2
,, 12.—Old Age	.....	137	.....	.....	60	197
,, 13.—Violence	31	8	2	1	3	45
,, 14.—Ill-defined Diseases	26	4	2	2	.....	34
Grand Total	3,780	750	62	198	424	5,214

TABLE X.—Operations performed during 1915.

	Recovered.		Died.		Total.
	Male.	Female.	Male.	Female.	
I.—Alimentary System.					
Teeth extraction	2	2	.....	.....	4
Repair of cleft palate	.....	1	.....	.....	1
Drainage, Appendicial Abscess	2	2	.....	.....	4
Gastro-enterostomy	.....	3	.....	.....	3
Cholecystotomy	1	1	.....	.....	2
Cholecystectomy	.....	1	.....	.....	1
Laparotomy	2	3	2	.....	7
Repair perforated palate	2	.....	.....	.....	2
Appendicectomy	23	12	.....	.....	35
Incising ischio-rectal abscess	8	1	1	.....	10
Hernia—					
Inguinal	48	.....	.....	.....	48
Incisional	3	1	.....	.....	4
Paracentesis abdominis	.....	13	.....	.....	13
Partial excision of tongue	1	.....	.....	.....	1
Excision fistula in ano	6	1	.....	.....	7
Intussusception	.....	.....	1	.....	1
Repair hare-lip	2	.....	.....	.....	2
Enterorrhaphy for perforated enteric	1	.....	1	.....	2
	101	41	5	.....	147
II.—Genito-Urinary System					
Circumcision	31	.....	.....	.....	31
Sigmoidoscopic examination	.....	1	.....	.....	1
Dorsal slit	16	.....	.....	.....	16
Incising Bartholin's abscess	.....	1	.....	.....	1
Incision and drainage of hydronephrosis	.....	1	.....	.....	1
Hydrocele	8	.....	.....	.....	8
Cystotomy	3	.....	.....	.....	3
Incising peri-urethral abscess	4	.....	.....	.....	4
Nephrectomy	.....	1	.....	.....	1
	62	4	.....	.....	66
III.—Cellular and Cutaneous System.					
Opening abscess	39	20	.....	.....	59
Amputation of ear	.....	1	.....	.....	1
Removing sebaceous cyst	1	.....	.....	.....	1
Excision of ulcer on foot	1	.....	.....	.....	1
Carbuncle, curetting	1	.....	1	.....	2
Incision and curetting	6	6	.....	.....	12
Plastic operation	3	.....	.....	.....	3
Avulsion of finger-nail	.....	1	.....	.....	1
Skin graft	1	2	.....	.....	3
Excision of mole	1	1	.....	.....	2
	53	31	1	.....	85
IV.—Reproductive System.					
Curettage of uterus	.....	29	.....	1	30
Examination P.V.	.....	9	.....	.....	9
Colpotomy	.....	3	.....	.....	3
Colpo-perinæorrhaphy	.....	1	.....	.....	1
Excision of vaginal cysts	.....	1	.....	.....	1
Hysterectomy	.....	2	.....	.....	2
Excision cyst of broad ligament	.....	1	.....	.....	1
Ectopic gestation salpingectomy	.....	1	.....	.....	1
Alexander's operation	.....	4	.....	.....	4
Trachelorrhaphy	.....	1	.....	.....	1
	.....	52	.....	1	53
V.—Osseous and Arthritic System.					
Curetting sinus	14	3	.....	.....	17
Sequestrectomy	7	.....	1	.....	8
Amputations	5	1	.....	.....	6
Plastic on hand	.....	1	.....	.....	1
Plastic on tendons of foot	1	.....	.....	.....	1
Radical mastoids	2	4	.....	.....	6
Fractures, dislocations	6	3	.....	.....	9
Tenotomy	2	3	.....	.....	5
Tarsectomy	3	.....	.....	.....	3
Osteotomy	2	2	.....	1	5
Foreign body in knee-joint	.....	.....	.....	.....	.....
Opening knee-joint	.....	.....	.....	.....	.....
Talipes (correction)	3	1	.....	.....	4

NOTE.—"Recovered" means lived 10 days or more after operation.

TABLE X.—Operations performed during 1915—*continued.*

	Recovered.		Died.		Total.
	Male.	Female.	Male.	Female.	
V.—*Osseous and Arthritic System—continued.*					
Moving joints under anæsthetics	.....	1	.....	...	1
Trephining skull	.....	1	.....	.....	1
Arthrectomy	.....	1	.....	.....	1
Arthrotomy	1	3	.....	.....	4
Incising suppurating periostitis	1	.....	.....	.....	1
Raising depressed fracture	1	.....	.....	.....	1
Incising prepatella abscess	.....	2	.....	.....	2
Curetting tendon sheath	.....	.....	.....	.....	.....
	48	26	1	1	76
VI.—*Respiratory System.*					
Paractentesis thoracis	2	2	.....	.....	4
Empyema	5	.....	.....	.....	5
Tracheotomy	3	4	2	7	16
Removal of adenoids	5	5	.....	.....	10
Removal tonsils and adenoids	.....	3	.....	.....	3
Laryngotomy	.....	1	.....	.....	1
	15	15	2	7	39
VII.—*Circulatory System.*					
Varicose veins	18	2	.....	.....	20
Hæmorrhoids	8	2	.....	.....	10
Radical cure varicocele	66	.....	.....	.....	66
	92	4	.....	.....	96
VIII.—*Lymphatic System.*					
Adenectomy	.....	1	.....	.....	1
Excision of glands of neck	3	.....	.....	.....	3
	3	1	.....	.....	4
IX.—*New Growths (Glands).*					
Excision of malignant glands	.....	.....	.....	.....	.....
Amputation of breast cancer	.....	3	.....	.....	3
Rodent ulcer	.....	.....	.....	.....	.....
Excision of lipoma	1	1	.....	.....	2
Lumbar tumour	1	.....	.....	.....	1
Sebaceous cyst	2	.....	.....	.....	2
Tumour of leg	1	.....	.....	.....	1
Epulis	1	.....	.....	.....	1
Epithelioma of face	2	.....	.....	.....	2
Exploration of tumour of hip	3	.....	.....	.....	3
	11	4	.....	.....	15
X.—*Miscellaneous.*					
Exploratory incision in lumbar region	1	.....	.....	.....	1
Injecting salvarsan	1	.....	.....	.....	1
Partial thyraedectomy	3	.....	.....	.....	3
Removal of foreign body from hand	1	.....	.....	.....	1
Extraction of splinter	1	.....	.....	.....	1
Wound Dressing	3	2	.....	.....	5
Encising hydatid of abdomen	.....	1	.....	.....	1
Suturing injury to finger	1	.....	.....	.....	1
Correcting hammer toe	2	.....	.....	.....	2
Tapping spina bifida	1	...	.....	.....	1
Plastic on right ear	1	.....	.....	.....	1
Swabbing cervix uteri	.....	3	.....	.....	3
	15	6	.....	.....	21
XI.—*Dual Operations.*					
Inguinal hernia and varicocele	5	.....	.....	.....	5
Extraction of teeth and adenoids	1	.....	.....	.....	1
Inguinal hernia and circumcision	1	.....	.....	.....	1
Salpingo-oophorectomy	.....	.....	.....	.....	.....
Double inguinal hernia	3	.....	.....	.....	3
Inguinal hernia and varicose veins	1	.....	.....	.....	1
Appendicectomy and inguinal hernia	6	.....	.....	.....	6
Appendicectomy and Alexander's operation	.....	1	.....	.....	1
Curettage and excision of hæmorrhoids	.....	1	.....	.....	1
Circumcision and incising bubo	1	.....	.....	.....	1
Varicocele and varicose veins	2	.....	.....	.....	2

NOTE.—"Recovered" means lived 10 days or more after operation.

TABLE X.—Operations performed during 1915—*continued.*

	Recovered.		Died.		Total.
	Male.	Female.	Male.	Female.	
XI.—*Dual Operations—continued.*					
Inguinal hernia, varicose veins, and appendicectomy	1	.....	.....	.....	1
Salpingectomy and appendicectomy	.....	1	.....	.....	1
Currettage and trachelorrhaphy	.....	2	.....	.....	2
Currettage, trachelorrhaphy, and appendicectomy	.....	2	.....	.....	2
Inguinal hernia and hydrocele	1	.....	.....	.....	1
Inguinal hernia and fistula in ano	1	.....	.....	.....	1
Inguinal hernia and Orchidectomy	1	.....	.....	.....	1
Currettage perneoriaphy and Alexander's operation	.....	1	.....	.....	1
Double inguinal hernia and appendicectomy	1	.....	.....	.....	1
Appendicectomy and internal shortening	.....	2	.....	.....	2
Currettage appendicectomy, internal shortening	.....	1	.....	.....	1
Curettage, trachelorrhaphy and Alexander's operation	.....	1	.....	.....	1
Inguinal hernia and hæmorrhoids	1	.....	.....	.....	1
Curettage, sinus and teeth extraction	1	.....	.....	.....	1
Colpotomy and appendicectomy	.....	1	.....	.....	1
Appendicectomy and excision of urethral caruncle	.....	1	.....	.....	1
Double Salpingectomy and left ovaristomy	.....	1	.....	.....	1
Orchidectomy and appendicectomy	1	.....	.....	.....	1
Femoral, hernia and varicose veins	1	.....	.....	.....	1
Appendicectomy and excision of ovarian cyst	.....	1	.....	.....	1
Incising cellulitis of hand and amputation of finger	1	.....	.....	.....	1
	30	16	.....	.....	46

NOTE.—"Recovered" means lived 10 days or more after operation.

Anæsthetic Used.

Ether	522
Chloroform and ether	32
Chloroform	1
Kelene and ether	1
Kelene	42
Cocaine	1
Beta eucaine	16
Beta, eucaine, and adrenalin	29
Anæsthetic not stated	4
Total	648

TABLE XI.—Statement of Working Expenses of the Coast Hospital for the year 1915.

MAINTENANCE AND TREATMENT OF PATIENTS AND STAFF.

	1915.	
	Amount.	Average.
A Salaries and Wages—	£ s. d.	£ s. d.
1. Administrative	855 0 6	
2. Medical	1,397 2 1	
3. Clerical	569 15 1	
4. Dispensary	231 16 11	
5 Nursing	6,642 3 5	
9. Laundry	435 9 10	
10. Tradesman and Mechanics	1,634 13 6	
11. Cleaning and General	2,180 13 1	
	13,946 14 5	31 13 11¼
B. Provisions—		
1. Meat	2,099 13 3	4 1 5¼
2. Milk	1,350 18 11	3 1 5
3. Butter	860 2 9	1 19 1½
5. Bread and Flour	933 11 6	2 2 5
6. Eggs	618 1 3	1 8 1
7. Fish, Fresh	698 13 2	1 11 9
8. Poultry	143 4 7	0 6 6
9. Groceries	2,2.0 13 4	5 0 11¼
10. Vegetables and Fruit	1,104 19 7	2 10 3
11. Malt Liquors		
12. Ice	90 16 5	0 4 1½
	10,120 14 9	.....
C. Drugs and Surgical Appliances—		
1. Drugs, &c.	2,135 14 11	4 12 6¾
2. Dressings and Bandages	119 2 2	0 5 5
3. Surgical Appliances, Renewals	54 16 1	0 2 6
4. Surgical Instruments, Renewals	76 8 6	0 3 5½
5 Stimulants	50 11 7	0 2 3¼
	2,336 13 3	

TABLE XI.—Statement of the Working Expenses of the Coast Hospital—*continued.*

	1914.	
	Amount.	Average.
	£ s. d.	£ s. d.
D. Fuel, Light, and Power—		
1. Coal, Coke, and Wood	1,067 5 0	2 8 6
4. Electricity	369 14 1	0 16 9¾
5. Electrical Fittings, Renewals	49 2 9	0 2 3
	1,486 1 10	
E. Domestic—		
1. Bedding and Bed Linen	766 11 10	1 14 10
2. Clothing	277 14 11	0 12 7½
3. Drapery	214 2 11	0 9 9
4. Uniforms	165 16 5	0 7 6½
5. Renewals of Furniture	110 1 3	0 5 0
6. Ironmongery, Cutlery, &c.	111 1 9	0 5 0½
7. Brushware, Earthenware, &c.	137 6 10	0 6 3
8. Laundry Materials	20 1 0	0 0 11
	1,802 16 11	
F. Printing and Stationery—		
1. Printing and Stationery	25 7 1	0 1 1¾
3. Postage	20 4 1	0 0 11
	45 11 2	
G. Maintenance of Buildings and Grounds—		
1. Ordinary Repairs and Alterations	1,126 15 5	2 11 2½
2. Roadways and Grounds	3 2 9	0 0 1½
	1,129 18 2	
J. Miscellaneous—		
1. Rates and Taxes	44 15 2	0 2 0¼
2. Insurance	237 6 4	0 10 9¼
3. Burials and Coffins	16 1 9	0 0 8¾
4. Telephones	36 6 7	0 1 8
7. Petty Expenses	170 4 6	0 7 9
8. Unclassified	96 13 10	0 4 5
	601 8 2	
K. Extraordinary Expenditure—		
1 Surgical Instruments	27 2 9	0 1 3
2. Appliances	91 5 3	0 4 2
3 Machinery	1 2 0	0 0 0½
4. New Furniture	63 0 0	0 2 10¼
5. New Buildings and Additions	108 10 9	0 4 11¼
	291 0 9	
Farm and Garden, Live Stock, &c.—		
Purchase of Horses and Cows	70 0 0	0 3 2
Purchase of Fodder	308 2 9	0 14 0
Miscellaneous (Fencing, &c.)		
	378 2 9	
£ s. d.		
32,139 2 2		
Add value of goods received from other Institutions 8 15 0		
	32,139 2 2	
32,147 17 2		
Deduct value of goods supplied to other Institutions 9 16 5		
32,138 0 9		
Add value of Stock on hand, 31st December, 1914 .. 1,002 18 0		
33,140 18 9		
Deduct value of Stock on hand, 31st Dec., 1915 ..... 1,901 13 8		
31,239 5 1		
Deduct Collections paid to Revenue 756 0 5		
	1,655 17 6	
30,483 4 8		
Total cost	30,483 4 8	
Cost per occupied bed		69 5 7

Table XII.—Amount expended from the vote of the Public Works Department, not included in the foregoing statistics :—

	£ s. d.
Repairs to hot water service, Ward XIII	2 15 0
Construction of Drainage, Infections Division	68 0 0
Repairs to Clock and Tower	13 13 1
	£84 8 1

TABLE XIII.—SUMMARY TABLE, showing the work of the Coast Hospital and its cost each year, from 1884 to 1915.

Year.	No. of Patients admitted.	Average residence of discharged patients in days.	Rate of Mortality on cases treated.	Infectious Diseases included in foregoing columns.																		Average daily number.	Cost per occupied bed.	Wines, spirits, &c., cost per head (included in foregoing columns).
				Typhoid Fever.		Scarlet Fever.		Diphtheria.		Plague.		Measles.		Whooping Cough.		Erysipelas.		Chickenpox.		Mumps.		Variola.				
				Admissions.	Deaths.	Admissions.	Deaths.	Admissions.	Deaths.	Admissions.	Deaths.	Admissions.	Deaths.	Admissions.	Deaths.	Admissions.	Deaths.	Admissions.	Deaths.	Admissions.	Deaths.	Admissions.	Deaths.		£ s. d.	£ s. d.
1884	1,132	29·33	4·04	235	25	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	104·33	58 1 1¼	2 3 2½
1885	1,204	37·03	7.05	285	50	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	150·05	51 16 8	1 11 2¾
1886	1,278	41·06	9·38	392	53	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	146·33	52 0 8	1 10 0¾
1887	1,726	42·05	9·21	286	36	43	...	...	...	...	...	18	...	...	...	...	...	1	...	...	...	...	...	198·56	42 14 1½	0 10 9¼
1888	1,694	42·23	5·55	241	15	52	...	1	...	...	...	33	...	...	...	45	...	3	...	...	...	...	...	197·12	41 13 2	0 8 8
1889	1,813	39·09	5·44	342	24	21	...	7	2	...	...	10	1	36	2	52	2	2	...	...	...	...	...	198·09	44 17 4¾	0 6 4½
1890	1,529	42·00	7·03	140	21	14	...	1	...	...	...	5	...	19	...	19	...	7	...	...	...	...	...	178·00	55 7 5	0 5 11
1891	1,748	40·00	3·23	88	8	22	...	4	...	...	...	1	...	25	2	31	...	7	...	...	...	...	...	193·00	50 2 6	0 5 2¾
1892	1,644	44·06	4·04	61	10	39	...	6	3	...	...	2	...	29	2	24	...	16	...	...	...	...	...	200·03	44 17 11¼	0 7 6½
1893	2,274	32·08	4·05	83	10	195	12	9	3	...	...	281	8	7	...	36	...	7	...	...	...	...	...	193·05	47 8 0	0 10 1
1894	2,158	27·06	4·03	143	12	118	9	9	3	...	...	7	1	28	3	36	3	26	...	...	...	...	...	176·04	55 7 4¼	1 3 6¾
1895	2,451	24·06	3·07	96	6	60	...	45	1	...	...	1	...	25	1	51	...	10	...	...	...	...	...	176·03	59 1 11	1 1 6¾
1896	2,213	31·03	5·04	236	19	61	2	11	1	...	...	2	...	3	...	63	...	1	...	...	...	...	...	204·06	51 6 1¾	1 4 4
1897	2,307	32·06	5·05	128	11	235	3	25	...	...	...	...	...	...	...	100	7	6	...	...	...	...	...	224·04	50 19 2½	1 9 10
1898	2,694	31·04	5·38	163	18	350	7	27	4	...	...	319	15	...	...	70	2	...	...	...	...	...	...	231·00	64 14 10¾	1 14 3¼
1899	2,359	36·30	4·79	148	13	134	2	25	2	...	...	10	...	42	10	54	...	8	...	...	...	...	...	224·25	73 10 11¾	1 13 10
1900	2,513	30·10	5·20	247	25	116	2	7	2	...	...	29	...	2	...	33	2	4	...	...	...	...	...	214·40	72 18 8¼	1 8 2¾
1901	2,688	31·24	5·75	214	21	150	5	65	4	...	...	131	1	15	...	49	5	11	...	...	...	...	...	255·50	59 4 3½	0 16 1½
1902	2,672	30·94	6·29	144	5	313	20	64	5	128	26	73	...	26	...	109	8	6	...	...	...	...	...	256·85	66 9 4¼	0 13 10¼
1903	3,359	31·72	4·67	166	20	585	21	92	...	2	...	62	1	13	3	84	6	3	...	13	1	...	...	300·76	61 17 11¼	0 5 2¾
1904	3,439	30·94	5·17	178	24	371	11	301	11	10	4	81	1	40	4	113	5	4	...	40	...	...	...	305·16	63 2 11¼	0 7 8¼
1905	3,298	31·81	5·20	139	20	284	6	313	10	16	4	43	1	1	...	100	6	6	...	1	...	...	...	289·32	59 12 0¾	0 8 4
1906	2,965	37·03	3·56	84	7	503	11	267	9	15	4	55	...	...	...	80	4	3	...	...	...	...	...	308·67	56 13 1¾	0 4 0¾
1907	3,051	37·16	5·93	101	12	336	5	389	23	41	11	157	5	93	20	58	...	...	...	...	...	...	...	307·41	58 17 8¾	0 4 5¼
1908	3,147	32·89	5·44	114	13	420	10	360	11	7	2	17	1	6	1	62	7	...	...	...	...	...	...	306·83	61 11 5	0 4 0¾
1909	2,971	31·13	5·53	96	8	339	6	500	12	22	7	55	...	4	...	72	3	...	...	...	...	...	...	295·33	63 5 4¼	0 4 1¾
1910	3,538	30·52	5·39	85	7	150	6	909	18	...	...	189	12	74	15	40	3	1	...	40	...	...	...	312·66	62 2 0¾	0 2 5¼
1911	3,474	29·19	5·32	66	8	134	...	974	24	...	...	70	...	67	12	48	4	...	...	...	...	...	...	322·62	64 0 1¼	0 4 0½
1912	4,170	29·54	5·76	67	8	108	4	1284	36	...	...	475	46	29	5	73	8	...	...	5	...	...	...	335·45	77 15 1¼	0 4 1¾
1913	3,702	31·83	5·13	77	10	287	7	994	28	...	...	93	...	64	14	48	5	...	...	22	...	4	...	335·51	87 6 6¼	0 3 3¼
1914	4,032	32·35	3·81	73	12	628	7	977	10	...	...	82	1	36	4	34	1	...	...	20	...	6	...	373·11	74 7 5	0 1 0¾
1915	4,8 6	39·9	4·12	123	10	1279	19	925	35	...	...	357	2	4	...	42	8	...	...	12	3	22	...	440·00	69 5 7	0 2 3½

2.—LEPER LAZARET.

TWENTY-FIFTH REPORT ON LEPROSY IN NEW SOUTH WALES, FOR THE YEAR ENDED 31ST DECEMBER, 1915.

The Medical Superintendent of the Coast Hospital to the Director-General of Public Health.

The Coast Hospital, Sydney, N.S.W.,
July, 1916.

Sir,

On 1st January, 1915, 24 persons remained under detention at the lazaret. [*See* Appendix A.]

During the year 3 persons were reported to the Board under the Public Health Act, 1902, Part 3, as being suspected Lepers, and after carful inquiry were duly certified as suffering from leprosy, and admitted to the Lazaret by warrant of the Board.

Four deaths occurred during the year, viz. :—
H.G., a Kanaka, admitted in 1905. Case CIII.
J.C.M., N.S.W., admitted in 1914. Case CXXXIV.
M.B., Ireland, admitted in 1911. Case CXXVII.
W.B., England, admitted in 1914. Case CXXXV.

One discharge occurred during the year, viz. :—
V.M.W., N.S.W., admitted in 1904. Case LXXXIX.

From the Summary column of Appendix A it will be seen that the total number of persons admitted since 1883, when patients first began to be received (though the notification of leprosy was first made compulsory and the detention of lepers provided for by law only towards the end of 1890), is 137.* Distributed under nationalities, the account stands as follows :—

	Admitted.	Died.	Discharged.	Repatriated.	Remaining in at 31 Dec., 1915.
Whites, of European descent—					
New South Wales	34	21	6	.....	7
Victoria	1	.....	.....	.....	1
Queensland	1	1	.....	.....	.....
New Zealand	1	1	.....	.....	.....
Fiji	2	1	.....	.....	1
England	10	6	2	.....	2
Ireland	5	4	1	.....	.....
Germany	2	2	.....	.....	.....
Belgium	1	1	.....	.....	.....
Greece	1	.....	.....	1	.....
U.S. America	1	1	.....	.....	.....
Coloured patients—					
China	51	16	.....	32	3
India	3	2	1 (absconded)	.....	.....
West Indies	1	.....	1 (in 1885).	.....	.....
Java	1	.....	.....	.....	1
Pacific Islands	17	7	.....	4	6
New Caledonia	1	1	.....	.....	.....
Zanzibar	1	.....	1 (To Hong Kong at own request)	.....	.....
Egypt	1	.....	.....	1	.....
Syria	2	.....	.....	1	1
	137	64	12	39	22

* This is the number of persons admitted; it does not agree with the highest number given in Appendix B in Roman numerals, which indicates the number of cases observed, whether admitted or merely described and recorded.

Thus the number remaining in the lazaret on 31st December, 1915, was 22 persons.

Appendix B

Appendix B shows particulars of each case under detention since the year 1883, and in Appendix C are given the usual notes of the new patients received during the year under review.

Every opportunity has been offered to members of the medical profession to visit the lazaret for the purpose of seeing such patients as were formerly under their care, or for study of the disease.

The following statements show the expenditure for the year, and the sources from which it has been defrayed :—

STATEMENT showing the Working Expenses of the Lazarets (for men and for women) at Little Bay for the year 1915.

	£	s.	d.
Salaries	798	5	6
Provisions	800	12	10
Fruits and vegetables	151	18	9
Uniforms, clothing, &c.	134	11	8
Printing and stationery	4	15	4
Fuel and light	107	19	10
Repairs	29	12	5
Wines, ale, &c.	20	16	11
Bedding and bed linen	31	8	3
Ironmongery, brushware, &c.	11	6	1
Drugs	39	2	5
Sundries	301	8	4
Total	2,431	18	4

Average number of patients resident, 21·75, being equal to an average of £111 16s. 2½d. per inmate per annum.

STATEMENT showing the total Expenditure of the Lazarets (for men and for women) at Little Bay du ing the year 1915, and from what sources the amounts were paid.

EXPENDITURE.	£	s.	d.	HOW PAID.	£	s	d.
To working expenses, as per attached statement.	2,431	18	4	From vote—Maintenance of lepers by Department of Public Health	2,142	5	4
				Transfers from Coast Hospital stock	289	13	0
Total	2,431	18	4	Total	2,431	18	4

The needs of the patients have been carefully supplied by experienced attendants and nurses, under direct supervision of myself and the Matron of the Coast Hospital, and, as in the past, every means have been adopted to alleviate their sufferings and to mitigate the hardships of their detention.

I have, &c.,

D. WALLACE,

Acting-Medical Superintendent.

APPENDIX A.

RETURN showing for each year since 1883 the number and nationality of persons suffering from Leprosy remaining in the Lazarets at Little Bay, New South Wales, on 1st January, and the Admissions, Deaths, and Discharges for each year.

Natives of—		1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914.	1915.	Summary Total.
Whites, of European descent.																																			
New South Wales.	Remaining	...	...	...	...	...	...	1	2	4	8	8	11	11	10	7	6	8	8	5	5	3	4	7	6	6	5	6	6	5	5	6	7	9	...
	Admitted	...	...	...	...	...	1	1	2	†5	2	3	1	...	...	...	3	1	...	2	...	2	4	...	...	...	1	1	...	...	2	1	2	...	34
	Died	...	...	...	...	...	...	...	...	1	2		1	...	3	1	1	1	3	2	...	1	1	1	...	1	...	...	1	...	...	...	...	1	21
	Discharged	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	2	...	...	...	...	...	...	1	...	...	1	...	...	1	6
Victoria	Remaining	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	1	1	1	1	1	...	...
	Admitted	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1
	Died	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Discharged	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Queensland	Remaining	...	...	...	...	...	...	...	...	...	...	...	1	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Admitted	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
	Died	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
	Discharged	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
New Zealand	Remaining	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Admitted	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
	Died	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
	Discharged	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Fiji	Remaining	...	...	...	...	...	...	...	...	...	...	1	...	1	1	1	1	1	1	1	...	...	1	1	1	1	1	1	1	1	1	1	1	...	...
	Admitted	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	2
	Died	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
	Discharged	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
England	Remaining	...	...	...	...	...	...	...	...	...	...	1	1	1	2	2	1	...	...	...	2	1	2	3	2	1	1	2	...	1	1	1	1	2	...
	Admitted	...	...	...	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	2	...	1	1	...	...	...	1	...	1	...	...	...	1	1	10
	Died	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	1	...	...	1	...	...	...	1	...	...	...	...	...	1	6
	Discharged	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	2
Ireland	Remaining	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	1	1	1	2	1	1	...	1	1	1	1	...
	Admitted	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	1	...	...	...	...	5
	Died	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1	4
	Discharged	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	‡1	...	...	...	...	1	...	...	...	...	...	1
Germany	Remaining	...	...	...	...	...	...	...	...	...	...	...	...	1	1	1	1	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...
	Admitted	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2
	Died	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	2
	Discharged	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Belgium	Remaining	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Admitted	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
	Died	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
	Discharged	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
United States of America.	Remaining	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	1	1	1	1	1	1	1	1	1	1	1	1	...	...	...	...	...
	Admitted	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
	Died	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1
	Discharged	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Greece	Remaining	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...
	Admitted	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1
	Died	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Discharged	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1
Coloured Patients.																																			
West Indies	Remaining	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Admitted	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
	Died	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Discharged	...	...	*1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
India	Remaining	...	...	...	...	...	...	...	...	...	...	...	1	2	1	1	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Admitted	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	3
	Died	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2
	Discharged	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1
China	Remaining	...	5	7	7	5	6	9	10	8	11	18	19	19	18	2	...	1	1	2	3	3	5	1	...	...	2	2	2	2	3	2	2	...	...
	Admitted	5	2	1	2	1	3	1	...	4	8	2	...	...	3	...	1	...	1	2	1	3	2	1	3	2	...	...	...	1	1	...	...	1	51
	Died	...	...	1	4	...	...	...	2	1	1	1	...	1	...	...	...	...	...	1	1	1	...	...	...	...	...	...	...	1	...	1	...	...	16
	Discharged	...	...	...	...	...	...	...	...	...	...	...	...	...	19*a*	2*b*	...	...	...	...	...	...	6*c*	2*d*	3*f*	...	...	...	...	...	...	...	...	...	32
Java	Remaining	...	...	...	...	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	...	...
	Admitted	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
	Died	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Discharged	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
New Caledonia	Remaining	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Admitted	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
	Died	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
	Discharged	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Other Pacific Islands.	Remaining	...	...	...	...	...	...	...	...	...	1	1	1	1	1	1	1	1	1	1	...	...	1	2	6	9	8	5	5	4	5	5	6	6	...
	Admitted	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	1	1	4	4	...	...	...	1	1	1	1	1	1	17
	Died	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	1	...	...	1	...	1	...	1	1	7
	Discharged	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	3*gh*	...	...	...	...	...	...	...	4
Egypt	Remaining	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Admitted	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1
	Died	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Discharged	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1*e*	...	...	...	...	...	...	...	...	...	...	1
Zanzibar	Remaining	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...
	Admitted	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1
	Died	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Discharged	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1
Syria	Remaining	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	2	1	...	1	1	...	...
	Admitted	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	2
	Died	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Discharged	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1

Totals—Admissions, 137; Deaths, 64; Repatriations and Discharges, 51; Remaining in, 22.

* Discharged on the 29th December, 1885, his sores having healed and there being no law warranting his detention. † One patient, I.L., reported 18th December, 1891, was removed to Little Bay on 12th January, 1892. ‡ Readmitted, 19th August, 1907. Repatriated:—*a* 14th August 1906; *b* 17th July, 1897; *c* 6th August, 1904; *d* 13th June, 1905; *e* 23rd June, 1905 *f* 9th November, 1906; *g* 9th May, 1908; *h* 1st December, 1908.

APPENDIX B.

RETURN showing Particulars of Lepers detained at Little Bay, New South Wales, since the year 1883.

Name.	Sex.	Native of—	Occupation.	Admission. Age on	Admission. Date of	Where from.	No. of Case in Clinical Notes.	Died or Discharged.
A.H.	Male	China	Gardener	42	19 April, 1883	Parramatta Asylum	.....	Died, 15 May, 1886.
J.H.	„	„	„	32	19 „ „	„ ...	.....	Died 27 June, 1886.
A.H.	„	„	„	34	12 June, „	„ ...	.....	Died, 20 April, 1886.
A.M.	„	„	Butcher	32	28 Oct., „	Tenterfield	XIV	Returned to China, 14 Aug., 1896.
A.P.	„	„	Storekeeper	27	28 „ „	Willow Creek	XV	
G.H.	„	„	Labourer	37	27 „ 1884	Sydney	.....	†Died, 24 Dec., 1886.
K.K.	„	„	„	24	21 Dec., „	Bathurst	.....	Died, 28 April, 1885.
J.B.	„	West Indies	„	51	22 Sept., 1885	Bermagui	.....	‡Discharged, 29 Dec., 1885.
A.Y.	„	China	Gardener	29	23 Dec., „	Sydney	.....	Died, 6 Feb., 1890.
C.B.	„	„	„	32	29 Jan., 1886	Alexandria	XVI	Returned to China, 14 Aug., 1896.
A.S.	„	„	Tin-miner	42	20 Feb., „	Cooper's Creek	.....	Died, 12 Nov., 1890.
C.T.	„	Java	Groom	24	14 Aug., „	Castle Hill, Parramatta.	XVII	
A.L.	„	China	Gardener	44	20 May, 1887	Bathurst	.....	Died, 12 April, 1891.
Y.S.	„	„	Carpenter	31	20 April, 1888	Sydney	XVIII	Returned to China, 14 Aug., 1896.
*F.G.	„	N.S.W.	Plasterer	27	21 Aug., „	„	I	Died, 25 Sept., 1892.
A.Y.	„	China	Gardener	29	30 Sept., „	Inverell	XIX	Returned to China, 14 Aug., 1896.
L.P.	„	„	Carpenter	18	22 Dec., „	Sydney	XX	
H.K.	„	„	Miner	28	23 Mar., 1889	Enfield	XXI	
*H.B.	„	N.S.W.	„	17	17 Dec., „	Mudgee	II	Died, 13 May, 1894.
*H.R.	„	„	Labourer	28	8 Aug., 1890	Richmond River ...	III	Died, 29 May, 1901.
*A.G.	„	„	Schoolboy	14	18 „ „	Balmain.....	IV	Discharged, 1 May, 1895.
*E.U.	„	„	Labourer	23	16 Jan., 1891	Sydney	V	Died, 1 May, 1898.
*H.S.	„	„	Mariner	41	23 „ „	Newtown	VI	Died, 4 Feb., 1891.
A.L.	„	China	Gardener	30	26 Feb., „	Newcastle	XXIII	Died, 28 Dec., 1895.
*M.R.	Female	N.S.W.	Domestic duties ...	33	§11 Mar., „	Surry Hills	VII	Died, 20 June, 1892.
T.W.	Male	China	Cook.....	29	6 Aug., „	Narrandera	XXV	Returned to China, 14 Aug., 1896.
W.C.	„	„	Labourer	40	27 „ „	Sydney	XXIV	
A.H.	„	„	Storekeeper	25	18 Sept., „	Mudgee	XXII	
J.L.	„	Tanna	Labourer	25	8 Dec., „	Clarence River	XXVI	Died, 7 May, 1901.
*R.W.	„	N.S.W.	Carpenter	47	24 „ „	Narrabri	VIII	Died, 27 Mar., 1896.
*I.L.	Female	„	Domestic duties ...	53	§18 „ „	Waverley	IX	Died, 16 June, 1899.
A.S.	Male	China	Cabinetmaker	28	21 April, 1892	Sydney	XXVII	Died, 29 June, 1892.
*C.D.	„	N.S.W.	Carpenter	24	30 „ „	Gunnedah	X	Died, 17 Aug., 1900.
S.P.	„	England	Commercial traveller	49	7 June, „	Sydney	XI	Died, 28 May, 1898.
H.G.	„	China	Wood-cutter	47	19 Sept., „	„	XXVIII	Returned to China, 14 Aug., 1896.
*M.E.K.	Female	N.S.W.	Domestic duties ...	43	21 „ „	North Sydney	XII	Died, 23 July, 1897.
L.P.H.	Male	China	Gardener	44	12 Oct., „	Manly	XXIX	Returned to China, 14 Aug., 1896.
‖W.W.	„	Fiji	Schoolboy	13	27 „ „	Sydney	XIII	Died, 26 Jan., 1901.
A.L.	„	China	Gardener	35	3 Nov., „	Bombala	XXXI	Returned to China, 17 July, 1897.
A.Q.	„	„	Dealer	39	15 „ „	„	XXXII	Returned to China, 14 Aug., 1896.
J.C.	„	„	.....	38	29 „ „	Sydney	XXXIII	Died, 2 Aug., 1893.
A.G.	„	„	Labourer	26	7 Dec., „	Parramatta	XXX	Returned to China, 14 Aug., 1896.
G.Y.	„	„	Cook.....	68	31 „ „	Sydney	XXXIV	
A.P.	„	„	Hawker	33	21 Jan., 1893	Parramatta	XXXV	
‖M.M.	Female	New Zealand	.....	24	27 Feb., „	Fiji	XXXVI	Died, 10 Sept., 1895.
A.T.	Male	China	Bushman	28	15 April, „	Cooma	XXXVII	Returned to China, 14 Aug., 1896.
*N.G.	„	N.S.W.	Miner	61	21 „ „	Parramatta Asylum	XXXVIII	Died, 4 April, 1896.
*A.M.	Female	„	Housewife	35	7 Sept., „	Balmain	XXXIX	Died, 13 Mar., 1896.
P.M.	Male	India	Hawker	47	3 Nov., „	Newcastle	XL	Died, 22 Mar., 1899.
*E.R.	Female	N.S.W.	Domestic duties	16	18 „ „	West Maitland	XLI	Died, 21 Sept., 1900.
C.H.M.	Male	Germany	Station overseer	65	25 Jan., 1894	Sydney	XLII	Died, 8 July, 1898.
‖W.H.D.	„	Queensland	.....	21	18 April, „	„	XLIII	Died, 29 Nov., 1896.
G.N.	„	New Caledonia	Pearl-diver	20	16 July, „	„	XLIV	Died, 1 Sept., 1895.
*H.J.T.	„	N.S.W.	Bushman	52	10 Oct., „	„	XLV	Discharged, 5 Sept., 1902.
K.J.	„	India	Hawker	30	30 Nov., „	„	XLVI	Died, 2 Aug., 1895.
J.T.	„	England	Labourer	70	4 April, 1895	Coast Hospital	XLVIII	Died, 6 Nov., 1897.
T.O'R.	„	Ireland	„	70	2 Oct., „	Sydney	LIII	Died, 8 Nov., 1895.
W.F.	„	„	Clerk	40	8 „ „	„	LII	Died, 8 Nov., 1896.
H.J.	„	China	Hawker	31	21 Jan., 1896	Coast Hospital	LV	Returned to China, 14 Aug., 1896.
H.Y.	„	„	Gardener	26	4 Feb., „	„	LIV	
A.T.	„	„	„	31	25 Dec., „	Oxley	LVI	Returned to China, 17 July, 1897.
F.R.	„	Belgium	Mechanic	55	16 Feb , 1897	Coast Hospital	LVIII	Died, 23 June, 1897.
H.W.	„	U.S.A.	Mariner	57	12 Nov., „	Lord Howe Island. .	LIX	Died, 14 May, 1911.
*W.W.	„	N.S.W.	Labourer	19	26 Feb., 1898	Wollongong	LXI	Died, 21 Feb., 1900.
*A.B.	„	„	„	20	22 Mar., „	Gunnedah	LXIV	Died, 7 July, 1901.
*R.C.	„	„	Butcher	27	9 July, „	Wollongong	LXII	Died, 30 April, 1903.
A.G.	Female	China	Housewife	38	23 Sept., „	Waterloo	LXVI	Died, 4 Feb., 1901.
*J.F.D.	Male	N.S.W.	Labourer	26	11 July, 1899	Lismore	LXVII	Died, 30 Mar., 1907.
C.P.	„	China	Scullcryman	22	14 April, 1900	Sydney	LXVIII	Died, 16 May, 1903.
B.A.	„	Aoba Island	Labourer	35	26 Feb., 1901	Murwillumbah	LXIX	Returned to Aoba, 1 Dec., 1902.
C.T.	Female	Germany	Housewife	29	23 April, „	Lismore	LXX	Died, 14 Dec., 1903.

* These are all natives of New South Wales, of European descent. † This patient was transferred to a Hospital for the Insane on 2nd April, 1885, where also his death occurred. ‡ See note * to Appendix A. § Date of report. These patients were afterwards removed to Little Bay. Of European descent.
Patients remaining under treatment have their initials shown in black-faced type.

RETURN showing Particulars of Lepers detained at Little Bay, New South Wales, since the year 1883—*continued.*

Name.	Sex.	Native of—	Occupation.	Admission.		Where from.	No. of Case in Clinical Notes.	Died or Discharged.
				Age on.	Date of.			
*D.N. ...	Male ...	N.S.W.	Labourer	18	4 June, 1901	Glen Innes	LXXI	Died, 28 Feb., 1905.
J.S.	,, ...	,, ...	Farmer	52	20 ,, ,,	Miller's Forest	LXXII	Discharged, 28 Feb., 1902.
*D.L. ...	,, ...	England.....	Labourer	46	20 ,, ,,	Rookwood Asylum	LXXIII	Died, 15 Dec., 1902.
F.H. ...	,, ...	,, ...	Seaman	75	4 July, ,,	Sydney	LXXIV	Died, 5 July, 1905.
A.R. ...	,, ...	China	Labourer	25	30 Oct., ,,	,, ...	LXXV	Returned to Hongkong, 6 Aug., 1904.
A.T. ...	,, ...	,, ...	,, ...	35	4 Dec., ,,	,, ...	LXXVI	
G.Y. ...	,, ...	,, ...	Miner	...	8 Jan., 1902	,, ...	LXXVII	Died, 17 Jan., 1902.
*J.G. ...	,, ...	N.S.W.	Grazier.....	57	13 ,, 1903	,, ...	LXXVIII	Died, 31 Aug., 1904.
M.S. ...	,, ...	Ireland	Miner	45	20 Feb., ,,	Parramatta Asylum	LXXIX	Died, 19 Feb., 1908.
F.H.L. .	,, ...	China	Gardener	32	10 Mar., ,,	Enfield	LXXX	Returned to Hongkong, 6 Aug., 1904.
G.M. ...	,, ...	England.....	Farmer	52	7 April, ,,	Cudgen	LXXXI	Discharged, 31 Mar., 1909.
†F.C.....	,, ...	Fiji.....	School	17	7 April, ,,	Fiji	LXXXII	
A.S.	,, ...	China	Wood-cutter	31	21 ,, ,,	Canterbury	LXXXIII	Returned to Hongkong, 6 Aug., 1904.
S.V.....	,, ...	Zanzibar	Seaman	22	5 May, ,,	Sydney.....	LXXXIV	
T.B.	,, ...	China	Cook.....	37	30 June, ,,	Canterbury	LXXXV	
W.M. ...	,, ...	Buka Buka ...	Labourer	36	3 Nov., ,,	Tweed River.....	LXXXVI	Died, 14th March, 1914.
*F.E.B....	,, ...	N.S.W.	Drover.....	27	25 ,, ,,	,, ...	LXXXVII	
*G.M.S....	Female	,, ...	Housewife	19	9 Feb., 1904	Lismore	LXXXVIII	
*V.M.W...	,,	,, ...	.....	17	31 Mar., ,,	Sydney	LXXXIX	Discharged, 11th Jan., 1915.
*D.D.	Male....	,, ...	Teamster.....	54	19 April, ,,	Botany	XC	Discharged, 20 Sept., 1909.
A.M.	,, ...	China	Farmer	24	3 May, ,,	Tumut	XCI	Returned to Hongkong, 6 Aug., 1904.
F.B.	,, ...	Mallicolo	Labourer	39	10 ,, ,,	Tweed River	XCII	Returned to native island, 9 May, 1908.
W.T. ...	,, ...	England.....	.....	65	4 July, ,,	Sydney	XCIII	Discharged, 20 Sept., 1906.
G.W.	,, ...	China	Labourer	32	27 Sept., ,,	Narrabri	XCIV	Returned to Hongkong, 13 June, 1905.
*R.B.....	,, ...	N.S.W.	Coach-painter.....	23	11 Oct., ,,	Newtown.....	XCV	Discharged, 22 March, 1912.
H.F.....	,, ...	China	Miner	45	24 Jan., 1905	Emmaville	XCVI	Returned to Hongkong, 13 June, 1905.
S.M.	,, ...	Lifu.....	Labourer.....	66	7 Feb., ,,	Tweed River.....	XCVII	Died, 8 Jan., 1907.
A.S.	Female	Egypt	Housewife	38	7 Mar., ,,	Sydney	XCVIII	Returned to Egypt, 23 June, 1905.
T.H.....	Male....	Ireland	Bullock-driver	65	11 July, ,,	Coast Hospital	XCIX	Discharged, 19 Dec., 1905. Readmitted, 19 Aug., 1907. Again discharged, 22 Feb., 1910.
J.W.	,, ...	Tanna	Labourer	40	11 ,, ,,	Maclean.....	C	Died, 30 Oct., 1906.
T.A.....	,, ...	Ambrym	,, ...	35	11 ,, ,,	,, ...	CI	
H.G.....	,, ...	Gala	,, ...	35	14 Nov., ,,	Tweed River..	CII	Died, 18th Feb., 1915.
G.B.	,, ...	Vanua Lava ...	,, ...	38	9 Jan., 1906	,, ...	CV	Died, 31 Aug., 1912.
G.A.	,, ...	Ambrym	,, ...	35–40	15 Aug., ,,	,, ...	CVI	Returned to native island, 1 Dec., 1908.
A.M.	,, ...	China	Gardener	30	4 Sept., ,,	Nyngan	CVII	Returned to Hongkong, 9 Nov., 1906.
L.A.	,, ...	Ambrym	Labourer	35	9 Oct., ,,	Tweed River	CVIII	Returned to native island, 9 May, 1908.
C.B.....	,, ...	China	Hawker	48	9 ,, ,,	Sydney	CIX	Returned to Hongkong, 9 Nov., 1906.
A.M.	,, ...	,, ...	Wood-cutter	58	9 ,, ,,	Glen Innes	CX	
W.D.....	,, ...	Lifu.....	Gardener	30	20 Nov., ,,	Turramurra	CXI	Died, 2 April, 1910.
P.S.....	,, ...	India	Hawker	35	19 Jan., 1907	Nowra	CXII	Absconded, 18 May, 1907.
C.S.C. ...	Female	Victoria	.....	40	16 April, ,,	Maroubra	CXIII	
Ah J. ...	Male....	China	Hawker	40	17 Sept., ,,	Sydney	CXIV	
H.F.	,, ...	,, ...	Cabinet-maker	40	29 Oct., ,,	Warren	CXV	
F.P.....	,, ...	England.....	None	68	14 Jan., 1908	Sydney	CXVI	Died, 11 Aug., 1909.
*A.R.	Female	N.S.W.	School	7	14 ,, ,,	Lismore	CXVII	
T.W.C. ..	Male....	,, ...	Farmer	45	18 Mar., 1909	Manilla	CXVIII	Died, 2 Nov., 1910.
P.J.....	,, ...	Syria	Hawker	54	10 Nov., ,,	Yalgogrin	CXIX	Repatriated, 1 Feb., 1911.
A.Z.....	,, ...	Greece	Scullery man	17	11 Oct., 1910	Sydney	CXXII	Repatriated, 1 Feb., 1911.
J.C.....	,, ...	England.....	Miner	48	15 Nov., ,,	,, ...	CXXIII	
J.A.....	,, ...	Syria	Hawker	35	29 ,, ,,	,, ...	CXXIV	
C.M.	,, ...	Tonga	Gardener	45	8 June, 1911	North Sydney	CXXV	
T.L.....	,, ...	China	Cabinet-maker	49	.....	Botany	CXXVI	Died, 8 Oct., 1911 (before transfer).
M.B.....	Female	Ireland	Teacher	33	7 Nov., 1911	Lismore	CXXVII	Died, 10th July, 1915.
S.C.	Male....	China	Cabinet-maker	40	21 May, 1912	Boolaroo, N.S.W....	CXXVIII	
L.J.T. ...	,, ...	N.S.W.	School.....	12	14 Aug., ,,	Lismore	CXXIX	
S.M.	,, ...	Mallicolo.....	Labourer	50	27 ,, ,,	Maclean.....	CXXX	
J.F.	,, ...	N.S.W.	Van-driver	28	19 Sept., ,,	Glebe.....	CXXXI	
W.D.....	,, ...	,, ...	Fisherman.....	22	24 June, 1913	Ulladulla, S. Coast	CXXXII	
J.M.	,, ...	New Hebrides	Labourer	60	28 Nov., ,,	Tweed River.....	CXXXIII	
J.C.M....	,, ...	N.S.W.	Miner	26	28 Jan., 1914	Homeville, West Maitland.	CXXXIV	Died, 17th June, 1915.
W.B.....	,, ...	England	Dealer	33	4 Mar., ,,	Sydney	CXXXV	Died, 14th August, 1915.
A.C.P...	,, ...	N.S.W.	School.....	15	23 June, ,,	Lismore.....	CXXXVI	
E.W.....	,, ...	South Sea Islands.	Labourer.....	50	17 Nov., ,,	Cudgen.....	CXXXVII	
H.H.....	,, ...	England.....	Labourer	36	19 May, 1915	Hornsby	CXXXVIII	
A.D.	Female	New Hebrides	Domestic	19	1 Sept., ,,	St. Kilda, Victoria	CXXXIX	
C.F.	Male...	China.....	Cabinet-maker	50	18 Dec., ,,	Waterloo, N.S.W.	CXL	

* Native of New South Wales, of European descent. † Of European descent.

NOTES.—(*a*) The cases of a few other persons who, for one reason or other, were never admitted to the lazaret, have been mentioned in the course of this series of Reports, and are additional to those shown in this Table. (*b*) On comparison with the reports for early years, differences in ages or dates of admission of some coloured patients will be observed. Those now given are the correct ages and dates.

Patients remaining under treatment have their initials shown in black-faced type.

APPENDIX C.

I.—NEW CASES.

Case CXXXVIII.—H.H., m., æt. 37; admitted 19th May, 1915.

History.—Born in London. Went to sea at 16 years. Followed that occupation eleven years, visiting at intervals China, Singapore, and other Eastern ports. Then Canada, two years; England, one year; landing in Australia in 1909. Since then in Hornsby district working as farm labourer.

History of illness.—February, 1908, sore throat, diagnosed as syphilis; two years antisyphilitic treatment. No further symptoms till 1914, when he began to suffer from nervousness and tingling sensations in left little finger. After two doses of salvarsan these symptoms cleared up, but recurred some months later, and soon after a yellowish discrete rash appeared on the abdomen. This rash did not respond to several injections of salvarsan. February, 1915. Wassermann reaction negative. Noticed loss of sweating reaction on ulnar surface of left forearm, and he began to have periods of drowsiness. Thereafter, rash spread rapidly, the whole cutaneous surface being involved in April.

Condition on admission.—General.—Height, 5 ft. 8 in.; weight, 9 st. 8 lb.; hair of outer half of both eyebrows considerably thinned.

Face.—Whole surface of face and forehead irregularly infiltrated, amounting to nodules above the eyebrows and on the upper lip. Anterior aspect of neck also infiltrated.

Reddish-brown, coin-sized macules on trunk and limbs, more numerous on the anterior surface of trunk and on the buttocks.

On the trunk and buttocks these macules are infiltrated and becoming confluent in parts.

Upper limbs.—Early typical deformity of hands.

Superficial nerves.—Ulnar, popliteal, and nerves of neck enlarged.

Numbness, and slight impairment of sensation of the fingers and toes and in front of the ankles. Numbness is specially marked in the third toe of left foot.

Glands of groin enlarged. B. Leprae in smears from lower lip and forehead.

Progress notes.—Towards the end of the year the local condition showed a slight improvement, and his general health was good.

Treatment.—Chaulmoogra oil, 45 m., increasing to 90 m. daily; strychnine, $\frac{1}{60}$ gr. twice daily.

Case CXXXIX.—A.D., F., æt. 19 years; admitted 1st September, 1915.

History.—Born at Aoba in 1896. Father, French; mother, New Hebridean. Removed to New Caledonia in 1900, and thence to Sydney in 1902. For the first eighteen months Anna lived at the Orphanage, Liverpool; then lived with her father at 32 Young-street, Woolloomooloo, for one year; afterwards removing to Kent-street, Darling Harbour. In September, 1906, went to New Zealand, and lived at Greymouth for two years. In June, 1908, went to Tahiti, where she remained two months; then removed to Raratonga, where she lived fifteen months. Returned to Greymouth in September, 1909. In 1910 was admitted to the Greymouth Hospital, where she remained for three or four months, under the care of Dr. Maurice. The father states that the question of leprosy was raised at this time, but abandoned after prolonged observation. He also stated that, acting under instructions, the girl was kept in an isolated cottage until July, 1912, when she left for Victoria. On arriving in Victoria she went directly to Mildura, returning after six months to Melbourne, where she was employed in domestic service. Apparently she was admitted to the Lazaret in Melbourne early in 1915, whence transferred to Sydney.

Condition on admission.—General health fairly good; weight, 7 st. 12 lb.

Head and neck.—Hair of scalp normal; of eyebrows, considerably fallen.

Face.—Irregular, macular staining of face and neck.

Infiltration of eyebrows, alæ nasi, right side of chin and both ear-lobes. In addition there are widely scattered cutaneous nodules, ranging in size from a pins head to that of a pea. Some of these nodules are surmounted by crusts. There is a large tuberosity in the upper and outer part of sclerotic of left eye, and causing marked protrusion of the upper lid. There is also some keratitis and injection of conjunctiva of this eye. Right eye normal; nose flat, but no ulceration detected. There is, however, a free purulent discharge from the nostrils. Has suffered from nasal obstruction for last four years. Some thickening of mucous membrane of hard palate adjacent to incisor teeth. Thyroid gland slightly enlarged, more especially the right lobe.

Upper limbs.—Arms.—There are a few scattered cutaneous nodules, similar to those noted on the face—some of these are almost healed.

Forearms.—Moderate cyanosis, cutaneous nodules, noted elsewhere, more numerous and larger on the left side. Many of these nodules are subcutaneous, and freely movable. In some instances they appear to be connected with the cutaneous nerves, which are extensively thickened. There is symmetrical diffuse infiltration of the skin covering lower half of radial border of forearms.

Right hand.—Slight wasting of intrinsic muscles. Sensation about normal.

Left hand.—Early typical deformity, flattening of arch, &c. Marked impairment of sensation, especially in the little finger, extending up the ulnar border into forearm. Ulnar nerves perhaps slightly enlarged.

Trunk.

Trunk.—Very little noteworthy. Pigmentation deepened in a girdle at level of lumbar region. Inguinal lymphatic glands enlarged.

Lower limbs.—There is considerable pigmentation of skin of lower half of each thigh, and a few scattered flat cutaneous nodules. Legs slightly cyanosed; skin is dry and glossy, and appears to be tightly stretched; cutaneous and subcutaneous nodules as in the case of the forearms, and, in addition, some more diffuse areas of infiltration. The left patella carries a cutaneous lesion 1 inch in diameter, resembling Psoriasis; there are similar but smaller lesions about left elbow tip—the right elbow tip is merely rough and scaly, and somewhat voluminous. There is a large elongated pigmented scar measuring 4 × 2 inches on the outer surface of lower half of left leg. The patient states that this scar resulted from a scald.

Sensation to pin prick.—Left foot and leg much impaired. Almost normal on right side.

Right external peroneal nerve enlarged; left difficult to palpate.

B. Leprae obtained in serum expressed from left cheek.

Treatment.—On admission she was given Gynocardate of magnesium, gr. xx daily.

Case CXL.—C.F., m., æt. 50 years; admitted 18th December, 1915.

History.—Born in Canton, China. Arrived in N.S.W. twenty years ago. Has lived at Waterloo, working as a carpenter, since then, except for a short time four or five years ago—when he was employed in the country cutting prickly pear.

History of illness.—Probably ailing five years. The disease began with ulceration of toes, which he attributed to the wounds of prickly pear.

Condition on admission.—General health, good; height, 5 ft. 3 in.; weight, 7 st. 6 lb.

Head and neck.—Normal, except for some stiffness of lower jaw.

Trunk and thighs.—Normal.

Upper limbs.—Right, about normal.

Left hand.—Tips of finger somewhat atrophied. There is definite loss of tissue of distal phalanx of middle finger, and stiffness of distal joint of ring finger.

Ulnar nerve (left).—Considerably enlarged.

Lower limbs.—Definite loss of tissue of tips of both great toes. That of the left is ulcerated. Nearly all the toes are somewhat similarly affected, and are also cyanosed.

Ext. popliteal nerves are enlarged. Sensation fairly normal.

II.—DEATHS.

Case CIII.—H.G., m., native of Gala Island; born about 1870; died 18th February, 1915.

Admitted 14th November, 1905.

Towards the end of 1914 his general health became much impaired, and he showed signs of insanity. He remained fairly well till 13th February, 1915, when the following note was made:—

Drowsy—almost stuporous. Answers when spoken to. Hands and arms twitching spasmodically. Temperature, 100 deg. Pulse, 126. Lungs clear.

Next day he was quite comatose, and was fed by nasal tube.

On the 16th he was less drowsy, but unable to move. K.J. not elicited. He died at 7·50 a.m. on the 18th.

Case CXXXIV.—J.C.M., m.; born in N.S.W. in 1887; died 17th June, 1915.

Admitted 28th January, 1914.

From July, 1914, his condition gradually became worse. He suffered from recurrent attacks of fever, with eruption of cutaneous nodules, and severe pain in course of superficial nerves, each attack leaving him on a lower plane than the previous one. Early in June, 1915, he was vomiting frequently after meals, and as result rapidly became emaciated. On 15th June diarrhœa set in. He died at 3·50 p.m., 17th June.

Notes made at *post mortem* examination at 11 a.m. on 18th June:—

Greatly emaciated. Scaly desquamation of skin over shins. Typical main en griffe.

Lungs.—Right, somewhat congested at base. Left, lower lobe congested, with lobular areas of consolidation.

Heart.—Right side dilated; muscle paler than normal.

Liver.—Appears somewhat fatty.

Kidney.—"Horse-shoe" kidney—two ureters present.

Spleen.—Large and firm.

Alimentary canal.—Stomach greatly congested, with patches of punctiform hæmorrhage.

Intestines.—Portions of ileum congested; no ulcerations. Appendix, retrocæcal, bound down at base.

There were adhesions, evidently old, about gall-bladder and in appendicial region, also slight perityphilitis and perisplenitis.

Nerves enlarged—portions of sciatic and ulnar removed.

Case

Case CXXVII.—M.B., f., Ireland; born 1877; died 10th July, 1915.

Admitted 7th November, 1911.

Her health gradually failed after a febrile attack which developed early in January, 1915 In March, œdema of dependent parts, with scanty urine, set in, and this condition persisted, gradually becoming more extensive, till shortly before death, when it lessened somewhat. On the 6th July there was vomiting and diarrhœa; the urine contained blood casts and was almost solid on boiling.

Case CXXXV.—W.B., m., England, æt. 34; died 14th August, 1915.

Lepra tuberosa et nervorum of rather severe grade. Admitted 4th March, 1914.

This patient was in fairly good health and getting about until the time of death.

For some weeks previously he had complained of vague cardiac pains.

He died rather suddenly in a cardiac seizure on the 14th August, 5·45 p.m.

Post-mortem. 12 p.m., 15th August.

Internal organs.—Apparently about normal.

Heart.—Right auricle greatly engorged and walls thinned. Otherwise nothing noteworthy in appearance of heart.

Liver and kidneys.—Congested.

Stomach.—Normal.

III.—DISCHARGE.

Case LXXXIX.—V.M.W., f., N.S.W.; born 1886; admitted 31st March, 1904.

Discharged 1st January, 1915.

The face is extensively scarred as result of healed lepromata.

There are no infiltrations nor other evidence of active disease.

Smears from nares, ear-lobes, and eyebrows were negative for bacilli leprae.

IV.—PROGRESS REPORT on Cases remaining on 31st December, 1915 (not including those admitted during 1915).

Case XVII.—C.T., m., Javanese; born about 1862; admitted 14th August, 1886.

Lepra nervorum.—Condition unaltered. No active signs.

Case LXXXII.—F.C., m., Fijian native, but of European descent; born 1886; admitted 7th April, 1903.

General health good. Recurrence of ulceration of foot noted in previous reports. Gained about one stone in weight.

Treatment.—Chaulmogra oil 135 m. daily, with strychnine gr. $\frac{1}{60}$ twice daily. Taken more or less regularly till 26th June, when both were discontinued.

Case LXXXVII.—F.E.B., m., born in N.S.W. in 1876; admitted 25th November, 1903.

General health good. Improved steadily during the year. There are now very few active signs.

Case LXXXVIII.—G.M.S., f., N.S.W.; born 1885; admitted 9th February, 1904.

General health fairly good.

The patient is now quite blind.

The nose bleeds frequently.

Many fresh ulcers on hands, feet, and legs during the year.

Treatment.—General treatment refused; that of the eyes as ordered by the Honorary Ophthalmic Surgeon continued.

Case CI.—T.A., m., native of Ambrym Island; born about 1870; admitted 11th July, 1905.

Ulceration of sole of right foot at base of toes, involving the whole breadth of the foot. General health good. The weight averaged 12 st. 5 lb.

Treatment.—Gynocardate of magnesium, gr. xx, t.d.s. more or less regularly throughout the year.

Case CXIII.—G.S.C., f., Victoria; born about 1867; admitted 16th April, 1907.

General health good. Disease apparently cured. No treatment.

Case CXIX.—Ah Jack, m., Chinese; born about 1867; admitted 17th September, 1907.

No alteration in mental condition. General health remarkably good; gaining steadily in weight. The only visible lesion is a perforating ulcer of right foot. No treatment.

Case CXVII.—A.R., f., N.S.W.; born 1900; admitted 14th January, 1908.

Lepra tuberosa.—The general health was good until August, when she had several typical attacks of angina pectoris. Since then she has been liable to breathlessness on even slight exertion. No gross lesions of heart detected. The disease locally shows a definite improvement.

Treatment.—Gynocardate of magnesium gr. 60 daily for the first half of the year, but subsequently the treatment has been symptomatic.

Case CXXIII.—J.C., m., English; born about 1862; admitted 15th November, 1910.

General health good.

Except for recurrent attacks of headache there was nothing noteworthy in this case during the year.

Treatment.—Chaulmoogra oil 90 to 135 drops daily, with Pil. Stryeh. gr. $\frac{1}{60}$ twice daily, fairly regularly throughout the year.

Case CXXIV.—J.A., m., Syrian; born about 1875; admitted 29th November, 1910.

General health good. Local condition shows no alteration.

Treatment.—Chaulmoogra oil and strychnine in usual doses, fairly regularly till August, when all except symptomatic treatment suspended.

Case CXXV.—C.M., m., Tongan; born about 1866; admitted 8th June, 1911.

General health good. No active signs.

Treatment.—Chaulmoogra oil 135 drops daily, and Pil. stryehninæ gr. $\frac{1}{60}$ twice daily, regularly during nine months of the year.

Case CXXVIII.—Sue Chung, m., æt. 42; admitted 21st May, 1912.

Lepra tuberosa et nervorum. Bedridden during the whole year. Exacerbations with eruption of tender nodules from time to time. Nerves, generally hypersensitive, widespread foci of superficial suppuration, responding quickly to local treatment. There was considerable wasting, though the appetite remained fairly good.

Treatment.—Tonic and symptomatic.

Case CXXIX.—L J.T., m., æt. 16; admitted 14th August, 1912.

Improvement noted in last report continues There are now practically no active signs. The extensive macular discolouration of thighs is clearing.

Treatment.—Chaulmoogra oil 135 minims daily, with Pil. Stryeh. gr. $\frac{1}{60}$ twice daily, taken regularly, except for an intermission of two months.

Case CXXX.—S.M., m., æt. 52; admitted 27th August, 1912.

General health good. Practieally free from active signs; some swelling of the hands was observed during the year, but this was probably rheumatic.

Treatment.—Chaulmoogra oil and Pil. strych. gr. $\frac{1}{60}$ twice daily, taken for about nine months of this year. In the intervals he was given anti-rheumatic treatment for swollen joints.

Case CXXXI.—J.F., m., æt. 28; admitted 19th September, 1912.

General health fairly good. Weight increased from 8 st. 4 lb. to 9 st. 11 lb. The local lesions also improved steadily throughout the year. The disease, however, is still well in evidence.

Treatment.—Chaulmoogra oil m. 135, with Pil. strych. gr. $\frac{2}{60}$ daily, which was taken fairly regularly in 1914, was discontinued in January of this year.

Case CXXXII.—W.D., m., aboriginal, native of N.S.W.; æt. 24; admitted 9th June, 1913.

The improvement noted in last report has been maintained. There are now no active signs; the weight increased from 8 st. 12 lb. to 9 st. 12 lb.

Treatment.—Chaulmoogra oil 135 drops, with strych. gr. $\frac{2}{60}$ daily. Discontinued in August. Resumed Chaulmoogra 45 drops daily, stryeh. as before, in October.

Case CXXXIII.—J.M., m., native of Palmer Island, New Hebrides; æt. about 61; admitted 23rd November, 1913.

His condition was fairly good till September, when he suffered from a recrudescence of the disease with eruption of painful subcutaneous nodules on both forearms accompanied by constitutional symptoms. In November there was a further eruption of cutaneous nodules, and also several indefinite cerebral seizures, characterised by stupor. These attacks left his mind somewhat impaired

Treatment.—Chaulmoogra oil 135 drops, with Pil. strych. gr. $\frac{2}{60}$ daily till September. Resumed in October.

Case CXXXVI.—A.G.P., m., æt. 16; admitted 23rd June, 1914.

General health good; weight increased from 7 st. 11 lb. to 8 st. 6 lb.; steadily improving.

Treatment.—Chaulmoogra oil 45 drops, with Pil. stryehninæ gr. $\frac{2}{60}$ daily, taken more or less regularly during the year.

Case CXXXVII.—E.W., m., æt. 51; admitted 17th November, 1914.

General health good. Weight increased from $8\frac{1}{2}$ to 10 st.; marked local improvement—there are now no obvious signs of the disease.

Treatment—Chaulmoogra oil 135 m. daily, and Pil. strych. gr. $\frac{1}{60}$ twice daily. These quantities were taken regularly throughout the year.

APPENDIX D.

EXAMINATIONS OF MATERIAL FOR LEPROSY BACILLI CARRIED OUT BY THE MICROBIOLOGICAL LABORATORY, DEPARTMENT OF PUBLIC HEALTH.

During the year eleven specimens were received for examination for leprosy bacilli or from *post-mortem* examinations in cases of leprosy or suspected leprosy. These were derived from nine different individuals. Three of the nine showed the presence of leprosy bacilli, and six did not. Of the three cases in which leprosy bacilli were found, in one instance the examination was made for diagnostic purposes; in the other two, material was received from *post-mortem* examinations.

CASE CXL.—C.F.—Chinaman. Examination made for diagnostic purposes on account of the left great toe showing chronic ulceration, the rest of the toes and both feet being purplish and atrophied, and the nails tending to disappear. The right ulnar nerve showed an indefinite uniform slight thickening and felt rather fibrous. The eyebrows were not thickened at all. The nostrils were very patent, and there was a very offensive ozena smell from them. There were no other lesions detected suggested of leprosy.

Smears from the nostrils showed the presence of typical leprosy bacilli in masses, but not numerous. Smears from the ulcers of the toe did not reveal any acid-fast bacilli.

CASE CIII.—H.G.—*Post-mortem* material received from the Coast Hospital on 5th March was examined as follows:—

Liver—
Firm, a whitish area present near the surface.
Sections:—Apparently normal.
Acid-fast bacilli were not detected.

Lung—
Firm, apparently consolidated, dark reddish in colour. Sinks in water.
Sections.—Alveoli filled with blood and a few desquamated cells; fibrin not obvious; much blood pigment in the septa.
Acid-fast bacilli were not detected.

Testicles—
Small and atrophied; the left smaller than the right.
Sections.—Right.—Testicular tissue proper gone. Organ consists chiefly of dense fibrosed tissue with thick vessels and occasional tubules replaced by hyaline thickenings of their walls. Occasional irregular tabules lined by a cubical epithelium, probably the remains of ducts; also occasional small collection of round cells. Acid-fast bacilli were not detected. Left.—Large cellular areas containing a few plasma cells; also a small cystic space lined by low columnar spithelium, and irregular branching spaces resembling an intracanalicular fibroadenoma of the breast, probably derived from the epididymus.
Acid fast bacilli were not detected.

Kidneys right and left—
Both appear somewhat congested.
Sections.—Slight congestion of the vessels. The walls of the vessels are slightly thickened. Left kidney shows a collection of what looks like bundles of unstriped muscle under the capsule.
Acid-fast bacilli were not detected.

Spleen—
Large, firm and fibrous.
Sections.—Moderately diffusely fibrosed with considerable pigment.
Two very doubtful acid-fast bacilli in a fibros strand.

Right ulnar nerve—
Appears somewhat thickened.
Cross sections.—Dense fibrotic thickening of the perineurium extending in between the nerve bundles, with occasional round cells between, compressing the nerve bundles and causing some atrophy, but not invading them.
Longitudinal sections.—Areas of round-cell infiltration.
Acid-fast bacilli were not detected.

CASE CXXXIV.—J.C.M.—*Post-mortem* material received from the Coast Hospital on 8th July was examined with the following results:—

Right lung—
Somewhat congested.
Sections.—Much congestion of the vessels, with many alveoli occupied by exudate or catarrhal cells. Some thickening of septa and occasional areas of fibrosis. Vessels thickened.
No acid-fast bacilli seen.

Left lung—
Portion of lower lobe consolidated.
Sections.—Alveolar septa a little thickened. Alveoli filled with leucocytes and some catarrhal cells and exudate in places. Some of the cells contain old blood pigment.
No acid-fast bacilli seen.

Heart—

Heart—
Pale and fatty-looking.
Sections.—Nil definite.
No acid-fast bacilli seen.

Liver—
Pale and and fatty-looking.
Sections.—Nil definite.
No acid-fast bacilli seen.

Spleen—
Large, firm and fibrous.
Sections.—Sinuses distended with blood, and with masses of blood pigment.
No acid-fast bacilli seen.

Suprarenals—
Apparently normal.
Sections.—Nil definite.
No acid-fast bacilli seen.

Pancreas—
Firm, apparently normally.
Sections.—Some small areas, usually near septa, of old hæmorrhages, infiltrated with leucocytes, some of which contain old blood pigment.
No acid-fast bacilli seen.

Right sciatic nerve—
Enlarged.
Sections.—Transverse section shows fibrosis surrounding the bundles and also penetrating between the fibres. Longitudinal section shows much fibrosis.
No acid-fast bacilli detected.

Right ulnar nerve—
Enlarged.
Sections.—Longitudinal section shows great increase in fibrous tissue, practically obliterating the fibres.
Scattered, mostly degenerate, groups of acid-fast bacilli.

Kidneys—
Conjoined horseshoe.
Sections.—Cortex diminished, intramedullary portion large. Marked increase in interstitial tissue, tubules open, lined by low epithelium; glomeruli fibrous, in many cases almost obliterated by fibrous tissue.
No acid-fast bacilli seen.

3.—DAVID BERRY HOSPITAL.

REPORT OF THE SECRETARY FOR THE YEAR 1915.

Sir,

I have the honor to submit the following Report on the working of this hospital during 1915 :—

STAFF.

Medical officer	K. GOERGS, M.B., Ch.M.
Matron (Acting)	Miss E. A. SHELLEY.
Secretary	H. BRUCE.

The work disclosed for the period under review is very satisfactory, showing an increase in the number of patients treated and the operations performed, and also a larger amount of fees paid.

Patients treated.—The number of patients treated during the year totalled 241, being an increase of 8 compared with the year 1914. A summary of the principal statistics is attached herewith.

	Males.	Females.	Total.
Patients remaining in Hospital, 31st December, 1914...	8	9	17
Patients admitted and registered during 1915	119	105	224
Total under treatment	127	114	241

The result of the total number is as follows :—

Discharges—

Recovered	182
Relieved	36
Unrelieved	3
Died	6
	227

Leaving under treatment, 31st December, 1915, 14. . Total, 241.

The rate of mortality over cases treated was 2·5 as compared with 10·3 for the previous year. Of the total deaths recorded, 2 cases were admitted in a moribund state.

The average daily number of patients treated was 14·52—Males, 8·01; Females, 6·51.

Collections.—The number of patients who contributed towards their maintenance was 65, and the total collected for fees and sales of drugs, &c., amounted to £248 8s. 4d., as compared with £195 10s. 2d. during the previous year.

The average duration of the stay of patients was 22 days.

Operations.—The operations for the year totalled 75, as against 56 in 1914 the doctors from Nowra assisting on 57 occasions were as follow :—Dr. Ewing, 17; Dr. Foy, 26; Dr. Rodway, 5; Dr. Hill, 7; and Dr. Molesworth, 2.

Infectious Cases.—The following cases were treated :—Measles, 9; diphtheria, 8; scarlet fever, 4.

Expenditure.—The total expenditure for the year amounted to £1,852 12s. 6d. as compared with £1,791 5s. 7d. for 1914. The advance in the prices of drugs and provisions being responsible for the extra expense.

Additions and Improvements.—No money has been expended during the year under this heading, except for the purchase of a new sulky at a cost of £24 15s.

Repairs.—No large amounts were spent for repairs during the twelve months, but the attention of the authorities is drawn to the necessity of repainting all the outdoor woodwork of the Hospital buildings.

General.—During the year the grounds have been kept in fairly good condition, but the supply of vegetables from the irrigation paddock was lost owing to the reduction of the male staff during eight months of the year. *Staff.*

Staff.—There were considerable changes in the personnel of the nursing staff during the year owing to the numbers taking up military duties.

Matron Perkins left for Egypt on the 16th August, and was succeeded by Acting Matron Shelley, who has filled the position rendered vacant most satisfactorily. Four other nurses also resigned in order to go to the front.

Detail tables are appended, showing the number of persons under treatment. nature of disease, &c.

H. BRUCE,
Secretary.

22nd February, 1916.

RETURN of the number of persons under treatment, the order of the disease for which they were treated, and the number of deaths in each order during the year 1915.

	Discharged during the year.				Remaining in on 31st December, 1915.	Total.
	Cured.	Relieved.	Un-relieved.	Died.		
I.—GENERAL DISEASES.						
Epidemic Diseases.						
6. Measles	9	...	...	...	...	9
7. Scarlet Fever	4	...	...	...	...	4
9. Diphtheria	8	1	...	...	1	10
10. Influenza	9	...	...	...	...	9
14. Dysentery	1	...	...	...	...	1
Other General Diseases.						
28. Tuberculosis (Lungs)	...	1	...	...	...	1
40. Cancer (Stomach and Liver)	...	...	...	1	...	1
41. Cancer (Peritoneum and Intestines)	...	...	...	1	...	1
43. Cancer (Breast)	1	...	1	...	...	2
47. Acute Articular Rheumatism	2	...	...	...	...	2
54. Anæmia (Chlorosis)	3	2	...	...	...	5
56. Alcoholism (Acute or Chronic)	4	2	...	...	...	6
	41	6	1	2	1	51
II.—DISEASES OF THE NERVOUS SYSTEM AND OF THE ORGANS OF SPECIAL SENSE.						
63A. Infantile Paralysis	...	1	...	...	...	1
64. Cerebral Hæmorrhage (Apoplexy)	...	...	...	...	1	1
72. Chorea	1	...	...	...	...	1
73. Neuralgia (Neuritis)	2	...	...	...	...	2
73A. Hysteria	...	...	...	...	1	1
74. Other Diseases of the Nervous System	4	4	1	...	1	10
75. Diseases of the Eyes and their Adnexa	2	...	...	...	...	2
75B. Trachoma	1	...	...	...	...	1
76. Diseases of the Ear	1	...	...	...	...	1
	11	5	1	...	3	20
III.—DISEASES OF THE CIRCULATORY SYSTEM.						
78. Acute Endocarditis	1	...	...	...	...	1
IV.—DISEASES OF THE RESPIRATORY SYSTEM.						
86. Diseases of the Nasal Fossæ	1	...	...	...	...	1
89. Acute Bronchitis	2	1	...	...	...	3
90. Chronic Bronchitis	...	1	...	...	1	2
92. Pneumonia	5	...	...	...	...	5
93. Pleurisy	1	1	...	...	...	2
96. Asthma	1	...	...	...	...	1
	10	3	...	...	1	14
V.—DISEASES OF THE DIGESTIVE SYSTEM.						
99 Diseases of the Mouth and Adnexa	2	...	...	...	1	3
100 Diseases of the Pharynx	14	1	...	...	...	15
101 Diseases of the Oesophagus	2	...	...	...	...	2
102 Ulcer of the Stomach	1	...	...	...	1	2
103A Gastritis	6	1	...	...	...	7
104. Diarrhœa and Enteritis (under 2 years of age)	...	...	...	1	...	1
108. Appendicitis (Typhlitis)	8	...	...	...	1	9
109. Hernia, Intestinal Obstruction	6	...	...	...	2	8
114. Biliary Calculi	1	...	...	...	...	1
117. Simple Peritonitis	1	...	...	...	...	1
	41	2	...	1	5	49

Return of the Number of Persons under Treatment, &c.—*continued.*

	Discharged during the year.				Remaining in on 31st December, 1915.	Total.
	Cured.	Relieved.	Un-relieved.	Died.		
VI.—Non-Venereal Diseases of the Genito-Urinary System and Adnexa.						
119. Acute Nephritis	1	1	...	...	...	2
120. Bright's Disease	...	3	...	1	...	4
123. Calculi of Urinary Passages.	...	1	...	...	...	1
124. Diseases of the Bladder.	4	...	...	...	...	4
125. Diseases of the Urethra, &c.	...	...	...	...	1	1
128. Uterine Hæmorrhage	8	...	...	...	...	8
130. Other Diseases of the Uterus	3	...	...	...	...	3
131. Cysts and other Ovarian Tumors	2	...	...	...	...	2
132. Salpingitis, other Diseases of the Female Genital Organs	5	...	...	...	...	5
133. Non-puerperal Diseases of the Breast	1	...	...	...	...	1
	24	5	...	1	1	31
VII.—Puerperal Condition.						
134. Accidents of Pregnancy	1	...	...	...	...	1
134A. Normal Childbirth	1	...	...	...	...	1
139. Puerperal Phlegmasia, Alba Dolens, Embolus, Sudden Death	...	...	...	1	...	1
	2	...	...	1	...	3
VIII.—Diseases of the Skin and of the Cellular Tissue.						
144. Acute Abscess	2	...	...	...	...	2
145. Other Diseases of the Skin and Adnexa	12	5	...	...	1	18
	14	5	...	...	1	20
IX.—Diseases of the Bones and of the Organs of Locomotion.						
146. Diseases of the Bones	...	2	1	...	...	3
147. Diseases of the Joints	4	1	...	...	...	5
148. Amputation.	1	...	...	...	...	1
149. Other Diseases of the Organs of Locomotion	1	...	...	...	...	1
	6	3	1	...	...	10
XI.—Diseases of Early Infancy.						
152. Other Diseases peculiar to Early Infancy	...	...	...	1	...	1
XII.—Old Age.						
154. Senility	...	1	...	...	1	2
XIII.—Violence.						
166. Conflagration (Burns)	1	...	...	...	...	1
170. Accident (Firearms)	1	...	...	...	1	2
171. Accident (Cutting or piercing Instruments)	1	2	...	...	...	3
172. Accident (Falls)	3	1	...	...	...	4
174. Accident (Machines)	2	...	...	...	...	2
175B. Accident (Vehicles or Horses)	4	...	...	...	...	4
175C. Accident (other)	1	1	...	...	...	2
185. Accident (Fractures)	4	...	...	...	...	4
185A. Accident (Dislocations)	1	...	...	...	...	1
	18	4	...	...	1	23
XIV.—Ill-Defined Diseases.						
188A. Heart Failure	...	1	...	...	...	1
189 Unspecified or Ill-defined	6	1	...	...	...	7
189B. No Disease, Feigned Disease	8	...	...	...	...	8
	14	2	...	...	...	16

Return of the Number of Persons under Treatment, &c.—*continued.*

	Discharged during the year.				Remaining in on 31st December, 1915.	Total.
	Cured.	Relieved.	Un-relieved.	Died.		
SUMMARY.						
Total Cases.						
I. General	41	6	1	2	1	51
II. Diseases of the Nervous System	11	5	1	...	3	20
III. Diseases of the Circulatory System	1	...	...	...	...	1
IV. Diseases of the Respiratory System	10	3	...	...	1	14
V. Diseases of the Digestive System	41	2	...	1	5	49
VI. Diseases of the Genito-Urinary System	24	5	...	1	1	31
VII. Puerperal Conditions	2	...	...	1	...	3
VIII. Diseases of the Skin and of the Cellular Tissue	14	5	...	...	1	20
IX. Diseases of the Bone and of the Organs of Locomotion	6	3	1	...	...	10
XI Diseases of Early Infancy	...	...	...	1	...	1
XII. Old Age	...	1	...	...	1	2
XIII. Violence	18	4	...	...	1	23
XIV. Ill-defined Diseases	14	2	...	...	...	16
	182	36	3	6	14	241

OPERATIONS performed during 1915 :—

	Recovered.		Died.		Total.
	Males.	Females.	Males.	Females.	
1.—*Alimentary System*					
Hernia	1	.....	.....	.....	1
Hernia, Strangulated	1	2	.....	.....	3
Appendicostomy	2	2	.....	.....	4
Appendiceal abscess	1	.....	.....	.....	1
Laparotomy, Exploratory	1	2	.....	.....	3
Laparotomy, Intestinal obstruction	.....	.....	1	.....	1
Hæmorrhoids	1	.....	.....	.....	1
	7	6	1	.....	14
2.—*Genito-Urinary System.*					
Circumcision	4	.....	.....	.....	4
3.—*Cellular and Cutaneous System.*					
Removal of Sebaceous Cyst	.....	2	.....	.....	2
Incisions	4	1	.....	.....	5
Opening abscess	2	1	.....	.....	3
Removal of splinter	.....	1	.....	.....	1
Suturing tendons	3	.....	.....	.....	3
	9	5	.....	.....	14
4.—*Reproductive System.*					
Turning and delivering	.....	.....	.....	1	1
Curettage	.....	11	.....	.....	11
	.....	11	.....	1	12
5.—*Osseous and Arthritic System.*					
Reducing dislocations	2	.....	.....	.....	2
Opening abscess of hip	.....	1	.....	.....	1
Amputation of toes	2	.....	.....	.....	2
Opening elbow-joint	1	.....	.....	.....	1
Opening knee-joint	2	1	.....	.....	3
Reducing fracture	1	.....	.....	.....	1
Teeth extraction	.....	1	.....	.....	1
Osteotomy	1	.....	.....	.....	1
	9	3	.....	.....	12

OPERATIONS performed during 1915—*continued.*

	Recovered.		Died.		Total.
	Males.	Females.	Males.	Females.	
6.—Respiratory System.					
Adenoids and tonsils removed	5	7	.....	.....	12
Adenoids removed	1	3	.....	.....	4
Tonsils	1	.....	.....	.....	1
	7	10	.....	.....	17
7.—Amputations.					
Amputation of breast	.....	1	.....	.....	1
8.—Dual Operations.					
Circumcision and adenoids	1	.....	.....	.....	1
SUMMARY.					
1. Alimentary system	7	6	1	.....	14
2. Genito-urinary system	4	.....	.....	.....	4
3. Cellular and cutaneous system	9	5	.....	.....	14
4. Reproductive system	.....	11	.....	1	12
5. Osseous and arthritic system	9	3	.....	.....	12
6. Respiratory system	7	10	.....	.....	17
7. Amputation of breast	.....	1	.....	.....	1
8. Dual operations	1	.....	.....	.....	1
	37	36	1	1	75

N.B.—One death was from embolism after a breach delivery, and the other was an old man with malignant of stomach, and incurable.

Anæsthetics used.

Chloroform and ether	52
Chloroform	9
Ether	3
Quinine and urea hydrochloride	6
Kelene	3
No anæsthetic given	2
	75

SUMMARY.

	1913.	1914.	1915.
Number of patients treated	266	233	241
,, ,, admitted	252	216	224
,, operations	78	56	75
,, deaths post-operative	3	1	...
,, deaths from other causes ..	8	23	6

H. BRUCE,
Secretary.

4. LADY EDELINE HOSPITAL FOR BABIES.

"GREYCLIFFE," VAUCLUSE.

Board of Directors.

President: Mrs. F. Flowers.

Vice-Presidents: Mrs. W. A. Holman,
Mrs. D. R. Hall.

Hon. Secretary Ladies' Committee: Mrs. M. B. Mergentheim.

Directors:

Mrs. G. Black,	Mrs. Ireland,
Mrs. W. G. Boorman,	Mrs. V. Ludlow,
Mrs. J. H. Cann,	Lady Maitland,
Mrs. Davies,	Mrs. Melville,
Mrs. K. Dwyer,	Mrs. Ogilvie,
Miss A. Golding,	Mrs. Rogers,
Mrs. A. Griffith,	Mrs. Seery,
Mrs. Harkness,	Mrs. J. L. Treflé.

Chairman: Dr. Robert T. Paton.

Vice-Chairman: Mr. A. W. Green.

Honorary Medical Officers.

Visiting Medical Officers:
Dr. C. W. Reid, Dr. L. R. Parker,
Dr. H. C. Adams.

Consulting Physician: Dr. Storie Dixson.

Consulting Surgeon: Dr. Charles MacLaurin.

Hon. Secretary: Mr. T. H. Neely.

Matron: Miss C. M. Burne.

Sister: Mrs. I. Furber.

Nine Nurses and three Attendants.

Hon. Secretary's Report.

During the year resignations were received from Mesdames J. J. Carroll, C. Carmichael, A. James and Lady Allen Taylor, and the following ladies were appointed to the directorate:—Mesdames J. H. Cann, Davies, A. Griffith, E. B. Harkness, Melville, Ogilvie, and Seery.

In compliance with the request of Mrs. Holman and Mrs. Flowers, leave of absence was granted in connection with their visits to America and the United Kingdom respectively.

With a view to bringing this hospital into line with other institutions of a similar nature, the Annual Report has been brought up to 31st December, so that the figures on this occassion will cover a period of thirteen months.

The ladies of the Committee have met regularly every month to deal with matters arising in connection with the hospital. Two members are appointed each month as a Visiting Committee, whose duty it is to pay special visits to the hospital and report on any matters needing attention.

The staff of the institution has had a very busy year in dealing with a large number of cases, many being in an extremely serious condition. During the last few months of the year, numerous cases admitted to the hospital have been quite beyond human effort, and this has made the position much more trying and difficult for both medical and nursing staffs, who have had an anxious time in their efforts to alleviate the sufferings of their helpless patients.

It is to be regretted that so many parents should not take steps in the earlier stages of the disease to place their infants in an institution where they will receive skilful medical and nursing attention, instead of sending them when there is practically no hope of a recovery. If this course were adopted their stay in hospital would be considerably shortened, and cots would be available sooner for other patients.

An epidemic of gastro-enteritis in a virulent form has been general throughout the metropolitan district, resulting in the death rate being over the average for the last five years, and it was found to be impossible to admit all the patients for whom admission was sought, owing to the limited accommodation available. After

After discharge from the institution, the mothers of the babies are encouraged to take them to the nearest Baby Clinic, so that they may obtain advice as to the feeding and care, &c., of their infants. Although the out-patients' clinic is still conducted at the Board of Health Offices, the numbers attending there are not as great as formerly, as the local clinics are more convenient.

The medical staff consists of five honorary medical officers, one of whom (Dr. L. Parker) has been absent on military duty.

The nursing staff consists of a matron, one sister, two staff nurses, and eight probationers. Miss Turner, the former matron, resigned her position in order to go on military duty, and her place was filled by Miss C. M. Burne on 9th November. Owing to her long experience, there is no doubt that the hospital's good name will be fully maintained under her supervision.

A considerable amount of money has been received towards the "Ladies' Auxiliary Fund." This is used by the Committee in providing special comforts for the inmates.

A wharf has now been provided at Steele Point within a few minutes of the hospital, and as the boats call regularly it has been found a great convenience.

The road to the hospital is at present in a very neglected condition, and the Trustees of the Neilsen Park have been approached with a request that steps be taken to repair same where necessary. The Honorary Medical Staff find it particularly trying, and their motor-car expenses are unduly increased through its present condition.

During the year 288 patients were admitted and 71 deaths have occurred. The mortality, it will be seen, has been slightly above that recorded for the previous year, owing to the greater number of cases treated and the more virulent form of disease. The daily average number of beds occupied was 29, and the highest number of patients in the hospital was during the month of November, when 32 cots were occupied. The patients remained in hospital for periods ranging from a few days to ten months, the average stay being 36·5 days.

Thanks are due to the Honorary Medical Staff, who have exercised their skill and attention on behalf of the patients, often at great personal inconvenience, and to those persons who have so generously aided the institution by gifts of clothing, books, pictures, &c.

Special mention should be made of a donation of £30 per annum which goes towards the maintenance of the Alice Heaver Cot, established in memory of the late Miss Alice Heaver, who lost her life in the Exeter railway accident.

LADY EDELINE HOSPITAL FOR BABIES, "GREYCLIFFE," VAUCLUSE

Ladies' Auxiliary Fund.

STATEMENT of Receipts and Expenditure from 1st December, 1914, to 31st December, 1915.

RECEIPTS.	£	s.	d.	EXPENDITURE.	£	s.	d.
Balance	74	16	5	Catering	12	10	0
Donations, &c.	121	16	6	Donation boxes	2	18	6
Greycliffe Samaritan Fund	25	0	0	Furniture	7	0	0
Donation, Alice Heaver Cot	15	0	0	Hot water service	89	10	0
				Additions and repairs	11	10	0
				Christmas gifts	7	2	0
				Sundries	6	11	3
				Balance	99	11	2
Total	236	12	11	Total	236	12	11

MATRON'S REPORT.

I HAVE the honor herewith to submit the Second Annual Report of the Lady Edeline Hospital for Babies, "Greycliffe," Vaucluse.

As was the case in 1914, the staff has had a very strenuous year, the cases of gastro-enteritis being of a very severe septic type, proving a tax on the nursing staff, and requiring very constant and careful nursing.

In the month of November the work was particularly heavy, there being more admissions for this month than at any other time during the year, and in fact, since the opening of the hospital; the mortality amongst infants being very heavy here as elsewhere. The statistics show that infant mortality has been greater this month than at any similar period during eleven years.

Unfortunately we could not receive all babies for whom admission was sought, as our accommodation is limited; as many as four having been refused in one day. Although the mortality rate has been high—24·6 per cent.—we feel very gratified for the fact that we have been able to discharge many very severe cases quite cured. This

This result is very encouraging, and we would urge mothers to bring their little ones to us in the early stages of the dread disease. By doing this we then have a chance of restoring the babies to perfect health. The parents are all most grateful for the care bestowed on their little ones, and we frequently receive letters expressing their gratitude.

The treatment is continued at the our-patients' clinic established at the Board of Health Depôt, and mothers bring their babies to be weighed and to seek advice concerning them.

We also advise attendance at the various Baby Clinics established in the city and suburbs, as it is often necessary that the infant should have daily supervision in case, as frequently occurs, the mother does not understand the method of feeding. Before leaving the hospital the child is brought to the stage of having fresh cows' milk, diluted according to age, and the mother is instructed as to the method of sterilising and keeping the milk free from contamination.

When a child is being breast-fed, the mother is also admitted so that the child's natural food may continue; this factor forms a great part in the speedy restoration to health of the child.

Many improvements have been effected during the year which have made the work of the hospital much lighter. The installation of a hot water service throughout is a very satisfactory addition, and pedestal basins in the wards minimise the labour of bathing the babies, and prevents, to a great extent, the spread of a troublesome skin disease which is very prevalent, though not attended with any serious results.

The kitchen, laundry, drying-room, pantry, and store have been painted, and look fresh and clean.

A bath has been removed from the room used as an isolation ward, and hot water laid on to this room, and to the mothers' quarters. The new dispensary is almost complete.

Additional water pipes have been laid round the grounds, and the lawns and gardens are showing signs of improvement. We hope early in the new year to be able to grow sufficient flowers for the decoration of the wards.

The difficulties of transit of patients has to a great extent been overcome by the erection of a wharf at Steele Point, within three minutes of the hospital. The boats are calling regularly, and the mothers and visitors find it a great convenience. A waiting-room is very urgently needed, as at present the only place for the mothers and visitors to wait is the front porch, and during the winter months it is very necessary that some place should be provided for the purpose. Also I think, from an economic point of view, a very useful addition to the hospital would be a ward apart from the other wards, where the babies, after the convalescent stage, could be cared for for a little while, in order to allow them to gain strength before returning them to their parents, who are in some instances quite injudicious in their treatment of the babies. This would to a great extent obviate the necessity of the child being returned to hospital for further treatment as is sometimes the case at present. Every life saved is an asset to the State, and the expenditure involved would result in wastage of infant life being reduced.

Five pupil nurses have completed their course and have left the hospital, one of the number joining the staff of the Coast Hospital to begin her general training. Five pupil nurses at present on the staff are receiving lectures, which have been delayed owing to the absence on military duty or active service of two of the honorary medical staff. They will be ready for examination early in February.

There have been several changes in the staff this year. Miss Turner, the first matron of the hospital, resigned in order to join the military nursing service. The success and the well-equiped condition of the institution are largely due to her efforts, since she did with credit all the pioneering work. Miss Turner sailed on the "Orsova" on 9th November for active service in Egypt.

Nurse Wellford, who succeeded Sister Baggaley, resigned in order to take a position on the staff of the Baby Clinics.

I succeeded Miss Turner as matron, and began duty here on 9th November. Sister Furber accompanied me to take the position as sister on the staff. As I have only been here such a short time, my knowledge of the general work of the institution for the year is somewhat limited.

During the time I have been here the staff has worked well, and has shown a devotion to duty which is deserving of much praise.

The domestic staff at present numbers seven, six mothers with babies, and one waiting woman. These women share the work of the institution.

Many donations have been received during the year, and we would tender our thanks to those ladies who have taken such a kindly interest in the hospital staff.

RETURN.

RETURN showing cases treated during the year :—

	Under 3 months.	Under 6 months.	Under 2 years.	Over 2 years.	Total.
Admitted during year	47	105	112	24	288
Deaths	11	29	30	1	71

Discharged—Cured	187
,, Relieved	11
,, Deaths	71
Remaining in Hospital, 31st December, 1915	19
Total	288

Mortality rate, 24·6 per cent.

Deaths occurring within a short time of admission have raised our mortality rate considerably. Twelve of the cases dying within a few hours were admitted in a comatose condition. Others responded slightly to stimulative treatment, but finally succumbed.

C. M. BURNE,
Matron.

TABLE showing Diseases treated :—

	Cured.	Relieved.	Died.	Remaining in Hospital.	Total.
Gastro-enteritis	135	3	47	19	204
Ilio Colitis	3	1	.....	.....	4
Marasmus	17	.....	10	.....	27
Marasmus and Pneumonia	1	.....	1	.....	2
Gastro-pneumonia	5	.....	5	.....	10
Gastro-eczema	1	.....	.....	.....	1
Gastro-t.b. glands	1	.....	.....	.....	1
Gastro-pneumonia and Measles	.....	1	.....	.....	1
Pulmonary Tuberculosis	.....	.....	1	.....	1
Pyelitis	.....	1	.....	.....	1
Congenital Syphilis	2	1	2	.....	5
Pneumonia	5	.....	3	.....	8
Pneumonia and Measles	.....	2	.....	.....	2
Bronchitis	2	.....	.....	.....	2
Dyspepsia	1	.....	.....	.....	1
Eczema	1	.....	.....	.....	1
Inguinal Hernia	2	.....	.....	.....	2
Purulent Ophthalmia	2	.....	.....	.....	2
Anæmia and Burns	1	.....	.....	.....	1
Gonorrhœa	4	.....	.....	.....	4
Rickets	.....	1	.....	.....	1
General Erysipelas	.....	1	.....	.....	1
Gastritis	4	.....	.....	.....	4
Meningitis	.....	.....	2	.....	2
					288

Number of cots in the Institution	30
Number of beds for mothers	9
Average daily number of cots occupied	29
Average daily number of beds for mothers occupied	6

5.—STRICKLAND CONVALESCENT HOME FOR WOMEN, "CARRARA," ROSE BAY.

FIRST ANNUAL REPORT, 1915.

Staff.

Visiting Medical Officer: Dr. C. W. Reid.

Matron: Miss E. M. E. Nance.

Nurse: Miss E. Bond and three Attendants.

The hospital was opened for the admission of patients in January, the first patient being admitted on the 7th of that month. The hospital was officially opened on 16th March, 1915.

The number of patients admitted during the year was 444; the number still remaining in hospital on 31st December was 31.

The number of beds provided was 30, and 4 cots. In December, 1915, the upper storey was furnished owing to the demand for beds, and an additional 10 beds were installed, making 40 beds and 4 cots in all.

The staff consists of matron, one nurse, one probationer (appointed in October last), and an out-door attendant, also a cook, laundress, and two maids. The patients are expected, a few days after admission (if able) to make their beds and assist in keeping their room clean and tidy.

The dining-room is fitted with small tables, seating 6 at each table.

There is a ward consisting of 4 beds and 4 cots, provided for mothers with babies in arms. These beds are usually occupied, the greater number of patients being sent in through the baby clinics. The majority of patients, shortly after admission, go in for sea-bathing, and this proves a great benefit to them.

Mr. Canfield was appointed as gardener and attendant previous to opening of the institution; he was dismissed, and Mr. Howell was appointed in his place in September. He is responsible for all out-door work, and is assisted by elderly men transferred from the State asylums. Since August last sufficient vegetables have been produced to supply the institution.

There are 5 cows milking, and milk is supplied to the Lady Edeline Hospital for Babies.

For the first few months the milk supply was very unsatisfactory, owing to nature of herbage; but latterly it has been very satisfactory.

About 40 young fowls were purchased in March, 1915, and we have had sufficient eggs to supply institution since June.

Improvements effected during the year included the supply of a new range and hot-water service, repairs to the roof, and instalment of a new system of drainage.

E. M. E. MANCE,
Matron.

6.—CONVALESCENT

6.—CONVALESCENT HOSPITAL FOR MEN, "DENISTONE HOUSE," EASTWOOD.

FIRST ANNUAL REPORT, 1915.

Staff.

Visiting Medical Officer—Dr. Guthrie Hunter.

Matron (Acting): Miss L. E. Hayes.

Nurse: Miss M. Hanson, and four Attendants

Sir,

Denistone House consists of a large dwelling and about 18 acres of land, and occupies a fine site on an elevated knoll, commanding an extended and beautiful view.

The hospital contains accommodation for 25 men. There are spacious verandahs, a fine dining-room, with a piano, and a smoke room.

The hospital was provisionally opened in August, 1914, the first patient being admitted on the 26th of that month, and it was officially opened by Mrs. W. A. Holman on 25th February, 1915.

During the year 1915, 275 patients were treated.

Patients remaining on 31st December, 1914	14
Admitted during the year	259
Discharged during the year	244
Remaining on 31st December, 1915	20
Daily average for year	16·2

The patients admitted were mostly persons convalescent after an acute illness, and they improved during their time here. We also had some incurable and chronic cases who have benefited greatly by their stay here.

There have been some confined to bed, for two or three days at a time, requiring medical attention, Dr. Hunter attending these cases.

Behaviour of patients generally good.

Three entertainments were given at the Hospital during the year for the benefit of patients.

Improvements.—New blinds for verandahs, also new vegetable garden, have been made, comprising half an acre of ground, fenced, drained, and water laid on. There have also been repairs to fences, drains, &c., attention to garden, poultry and dairy.

Approximate weight of vegetables grown, and quantities of milk, and number of eggs produced :—

Vegetables	9,600 lb.
Milk	2,942 gals.
Eggs	6,116
Fruit	600 lb.

This work, assisted by inmate labour, is carried out by officer in charge.

Patients are met from the train leaving Sydney at 12·40 every day, except Saturdays, Sundays, and public holidays.

The Matron, Miss Nettle, was accepted for Active Service, and resigned at the end of the year.

L. E. HAYES,
Acting Matron.

7.—WATERFALL

7.—WATERFALL STATE SANATORIUM, N.S.W.

REPORT OF THE MEDICAL SUPERINTENDENT FOR THE YEAR 1915.

Staff.

Honorary Consulting Physician	Dr. S. H. MacCulloch.
Honorary Physician	Dr. Cecil Purser.
Medical Superintendent (resident)	Dr. H. W. Palmer.
Junior Medical Officer	Dr. H. Baret.
Lay Assistant Superintendent	Mr. C. MacDermott.
Matron	Miss K. Walsh.
Clerk and Storekeeper	Mr. A. Douglas.

Constitution of Hospital Staff on 31st December, 1915.

Medical and Administrative.	No.	Nursing.	No.	General.	No.
Medical Superintendent...	1	Sub-matron	...	Foreman	1
Assistant Medical Officer..	1	Nurses	22	Artisans	2
Assistant Superintendent.	1			Male Cooks	2
Matron	1			Kitchenman.....	1
Clerk	1			Attendants	5
				Female Cook	1
				Female Servant	1

Number of Wards and Beds.

No. of Ward.	Capacity in cubic feet.	No. of Beds and Cots.	Cubic feet to each bed.	No. of beds in open air.	No. of Ward.	Capacity in cubic feet.	No. of Beds and Cots.	Cubic feet to each bed.	No. o beds in open air.
1	28,800	28	1,028	.....	7	28,800	28	1,028	.....
2	28,800	28	1,028	.....	8	28,800	28	1,028	58
3	28,800	28	1,028	.....	9	28,800	28	1,028	.....
4	28,800	28	1,028	.....	10	28,800	28	1,028	.....
5	21,600	18	1,200	.....	11	28,800	24	1,200	.....
6	21,600	18	1,200	.....	12	28,800	24	1,200	.....

Admissions and Discharges.

Patients in residence on 31st December, 1914		316
Patients admitted during 1915		578
Total number of patients under treatment		894
Patients discharged	372	
Patients died	176	
		548
(Death-rate percentage of total discharges, 32·1 per cent.)		
Patients remaining in residence on 31st December, 1915		346
Condition of discharged patients :—		
Arrested cases	94	
Much improved cases	138	
Improved cases	111	
Unimproved cases	29	
		372
Average daily number of occupied beds		335
Average residence of all discharged patients...		191 days
,, in days of arrested cases		255
,, ,, much improved cases		220
,, ,, improved cases		82
,, ,, unimproved cases		201
,, ,, deceased patients		201
Total cost of maintenance and treatment of patients ...	£16,841 10s. 4d.	
Average cost of patients per annum	£40 13s. 7d.	

I have the honor to report that during the year 1915 there were 600 males and 294 females patients under treatment. Of this number, 234 male and 82 female patients were in residence on 1st January, 1915, and 366 male and 212 female patients were admitted during the last twelve months.

During this period 372 patients were discharged, and 176 deaths occurred.

Of the patients discharged, 53 male and 41 female patients had the disease arrested, having no signs of active disease and able to do moderately heavy work. Beside

Besides these, 101 male and 37 female patients were much improved and able to return to ordinary life.

Of the remainder, 80 male and 31 female patients were somewhat benefited by their stay here, while 29 showed no apparent improvement.

These results are somewhat better than previous years, in spite of the fact that a much larger percentage of admissions were of a very advanced type, over 30 per cent. having the throat affected.

This accounts for the increased number of deaths, but the number of those unimproved is much less, so that the total of these two groups is really less than the total of the same groups in previous years.

The reason of these better results lies probably in the fact that last year was a particularly mild year, the winter being especially so.

Owing to the presence of such large numbers of the very sick, it is impossible for us to do the most good for the most hopeful cases. To get the best results, it is essential for the cases that would improve to be quite apart from hopeless ones. Many good cases will not stay through seeing others dying of the very disease they themselves are suffering from. Again, those who do stay are depressed by the same circumstances, and should they recover to be able to do light work, hasten to return to their ordinary life before being properly ready.

Owing to the great demand for admission by male patients, ten extra beds were obtained and put in the existing wards. These are always filled, and the demand continues. While the need for beds is so urgent, the cases not fit to travel should be refused admission. Last year many cases were sent from distant districts in this condition. It would be far wiser to leave these unfortunates near their friends for the few weeks they have to live than subject them to the misery of a long rough journey, for no possible benefit.

Similar treatment to that carried out in past years was employed during the year, no new methods of value having come to light.

The presence of the war raised many difficulties as regards supplies, but these were surmounted more or less successfully. The loss of so many drugs proved convincingly that certain drugs are most essential in treating this class of patient. Drugs have always been regarded as of only secondary importance, but last year's experience shows our helplessness without them.

The patients have been greatly helped and benefited by the efforts of their Amusement Committee, who have arranged many concerts and attractions throughout the year.

The work of the staff has been much heavier this year, owing to the marked increase in the number of bed patients, and those requiring surgical dressings.

We have also been without the services of our Sub-matron, who is doing war service in England, while several of our attendants have joined the Expeditionary Forces. Notwithstanding these disabilities, the remainder of the staff successfully carried out all duties.

By careful local adjustments, the Nursing Staff were able to get their recreation leave without extra assistance till instructions were issued that all leave was to cease. This rule, as applied to a place like ours, should be immediately withdrawn, for it is absolutely hygienically unsound, the leave being essential to the mental and physical health of the staff.

During the year the new steam boiler and disinfector were finally installed, but unfortunately the work was so interrupted that we were practically without steam for the first half of the year.

The surroundings of the Hospitals have been gradually improved, the laying out of grounds being extended. The area of the orchard has been increased and new fruit trees planted.

The vegetable gardens and the pig returns have proved very satisfactory, but the prolonged period of dry weather has been very detrimental.

Attached are a number of tables dealing with the yearly results. A careful examination of them again forcibly demonstrates the fact that consumptives taken in hand early have good chances of arrest, while those allowed to miss early sanatorium treatment are at a very great disadvantage.

H. W. PALMER,
M.B., Ch.M.

Condition of Patients on Admission and Discharge during Year 1915.

Condition on Admission.	Arrested.	Much improved.	Improved.	Unimproved.	Died.	Total.	Remarks.
Incipient	26	12	...	6	...	44	Unimproved in less than two weeks.
Moderately early	64	87	17	2	...	170	
Moderately advanced	4	33	36	9	39	121	
Far advanced	...	6	58	12	137	213	

Arrested cases—Have no sign of active disease; temperature normal; no sputum, and able to do a fair amount of work.

Much improved—Have slight signs of active disease; temperature normal; with or without sputum; fit for light work.

Improved—Disease more or less active, with varying degrees of improvement since admission.

Unimproved—Disease progressing, or no apparent improvement.

Table to correct Value of Averages and Results—1915.

	In residence over 3 years.	In residence over 2 years and under 3 years.	In residence over 1 year and under 2 years.	In residence over 6 months and under 12 months.	In residence 14 days and under 1 month.	In residence under 14 days.
Arrested cases	2	1	12	30	...	...
Much improved	2	2	20	45	...	...
Unimproved	1	...	3	5	2	13
Deaths	4	6	20	31	21	13

Sanatorium cases generally stay six to twelve months. Cases staying over this period affect results adversely, as do patients who stay a very short period. Such cases are only given in this table.

Birthplace of Patients discharged in 1915.

Country.	No. of patients.	Country.	No. of patients.
New South Wales	282	India	3
England	109	United States of America	3
Victoria	41	Sweden	2
Ireland	38	Austria	1
Scotland	26	Ceylon	1
Queensland	8	China	1
Tasmania	8	France	1
Wales	7	Italy	1
New Zealand	6	Montenegro	1
South Australia	4	Norway	1
Germany	3	Switzerland	1

Occupations of Patients discharged or died during 1915.

Accountant	4	Engine-driver	3	Plasterer	3
Agent	1	Engineer	5	Plumber	3
Attendant	2	Factory hand	9	Policeman	5
Barman	5	Farm labourer	13	Postman	2
Blacksmith	1	Fireman	3	Railway employee	4
Bookbinder	1	French polisher	2	Rockchopper	5
Bricklayer	2	Gardener	4	Rubber worker	2
Brickmaker	2	Gas employee	1	Salvation Army Officer	1
Butcher	1	Glass-worker	1	Seaman	9
Carpenter	11	Greengrocer	2	Shearer	1
Chemist	2	Hairdresser	5	Shoemaker	6
Children	14	Horse-trainer	1	Shop assistant	13
Cleaner	3	Housewife	90	Sleeper-cutter	1
Clerk	22	Housework	54	Soldier	3
Coal-trimmer	1	Ironmonger	1	Stationer	1
Commercial traveller	11	Jeweller	4	Stevedore	1
Compositor	2	Labourer	68	Stonemason	2
Confectioner	1	Laundryman	1	Storeman	3
Cook	10	Lift attendant	1	Tailor	6
Coppersmith	1	Lithographer	2	Tanner	1
Cordial maker	1	Mechanic	8	Teacher	5
Draper	4	Miner, (Coal)	1	Tram conductor	7
Draughtsman	3	Miner (Quartz)	27	Waiter	5
Dressmaker	5	Musician	1	Wharf labourer	3
Driver	16	Packer	4	Woodcarver	4
Dyer	1	Painter	10	Woolsorter	1
Electrician	2	Piano-tuner	1		

Ages of Patients discharged and deceased, 1915.

1 to 9 years.	10 to 19 years.	20 to 29 years.	30 to 39 years.	40 to 49 years.	50 to 59 years.	60 to 69 years.	70 to 79 years.	80 to 89 years.
6	37	165	152	103	67	17	1	...

WATERFALL SANATORIUM.—STATEMENT of Expenditure for year ended 31st December, 1915.

Particulars.	Amount as per Contractor's Vouchers.	Add Exchange Goods Received from other Institutions.	Total Expenditure.	Deduct Exchange Goods supplied to other Institutions.	Actual Cost.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Rations	7,737 14 8	978 18 2	8,716 12 10	20 0 4	8,696 12 6
Medical comforts	12 0 2	.....	12 0 2	.....	12 0 2
Drugs, surgical appliances	244 10 7	.....	244 10 7	.....	244 10 7
Disinfectants	56 4 5	.....	56 4 5	.....	56 4 5
Light	214 18 0	.....	214 18 0	.....	214 18 0
Water	264 0 7	.....	264 0 7	.....	264 0 7
Horse-shoeing	27 0 0	.....	27 0 0	.....	27 0 0
Hardware	79 15 7	.....	79 15 7	7 12 2	72 3 5
Clothing	240 17 2	119 5 7	360 2 9	25 6 8	334 16 1
Fodder	294 17 6	.....	294 17 6	.....	294 17 6
Rent, repairs and furniture	134 18 8	.....	134 18 8	.....	134 18 8
Fuel	388 11 8	.....	388 11 8	.....	388 11 8
Stationery	3 19 2	.....	3 19 2	.....	3 19 2
Postage stamps	23 1 2	.....	23 1 2	.....	23 1 2
Sundries	57 2 1	.....	57 2 1	.....	57 2 1
Bedding and bedsteads	.....	.....	.....	.....	.....
Harness	2 19 7	.....	2 19 7	.....	2 19 7
Farm and land improvements	0 15 0	.....	0 15 0	.....	0 15 0
Soft goods	55 16 10	.....	55 16 10	.....	55 16 10
Timber	54 3 0	.....	54 3 0	.....	54 3 0
Leather and grindery	18 4 3	.....	18 4 3	.....	18 4 3
Brushware	7 14 0	.....	7 14 0	.....	7 14 0
Live stock	.....	.....	.....	.....	.....
Burial fees	22 5 0	.....	22 5 0	.....	22 5 0
Telephone and postal service	37 3 0	.....	37 3 0	.....	37 3 0
Insurance	.....	.....	.....	.....	.....
Drays	.....	.....	.....	.....	.....
Washing	.....	87 11 4	87 11 4	.....	87 11 4
Building construction	.....	.....	.....	.....	.....
Motor lorry	92 3 1	.....	92 3 1	.....	92 3 1
Lubricant	7 14 0	.....	7 14 0	.....	7 14 0
	10,078 9 2	1,185 15 1	11,264 4 3	52 19 2	11,211 5 1
Petty cash	43 13 4	.....	43 13 4	.....	43 13 4
Salaries	4,927 15 3	5 2 5	4,932 17 8	.....	4,932 17 8
Gratuities to inmates	1,215 9 6	.....	1,215 9 6	.....	1,215 9 6
£	16,265 7 3	1,190 17 6	17,456 4 9	52 19 2	17,403 5 7

Particulars.			Actual Cost.
			£ s. d.
Brought forward			17,403 5 7
Add Stock on hand, 31st December, 1914—	£ s. d.		
Hardware	177 19 5		
Soft goods	321 0 11		
Drugs, surgical appliances	148 18 8		
Groceries	167 18 0		
Horses	185 0 0		
Pigs	328 17 0		
Poultry	3 16 6		
			1,333 10 6
			18,736 16 1
Deduct Stock on hand, 31st December, 1915—			
Hardware	159 3 9		
Soft goods	219 2 3		
Drugs and surgical appliances	142 14 9		
Groceries	173 15 10		
Horses	210 0 0		
Pigs	310 6 0		
Poultry	2 15 0		
			1,217 17 7
			17,518 18 6
Deduct Revenue collections—			
Waterfall Sanatorium	739 11 2		
Head Office	512 4 9		
			1,251 15 11
			16,267 2 7
Cost per head upon Expenditure of £16,267 2s. 7d. = £39 5s. 10d.			
Add Head Office debit			574 7 9
			£16, 841 10
Cost per head upon Expenditure of £16,841 10s. 4d. = £40 13s. 7d.			
Daily average number of inmates—			
Hospital patients	335		
Workers	79		
	414		

C. MACDERMOTT,
Assistant Superintendent.

8.—ROOKWOOD STATE HOSPITAL AND ASYLUM FOR MEN, LIDCOMBE.

REPORT OF THE MEDICAL SUPERINTENDENT FOR THE YEAR ENDED 31st DECEMBER, 1915.

Honorary Staff.

Honorary Staff Surgeon.—The Hon. J. B. Nash, M.D., M.R.C.S., Eng., M.L.C.

Honorary Ear, Throat, and Nose Surgeon.—W. A. Dunn, M.R.C.S., Eng.

Honorary Ophthalmic Surgeons.—H. J. W. Brennand, M.B., M.Ch.; A. Wallace Weimen, M.D., B.Sc.; Guy Pockley, M.B., M.S.

Honorary Dermatologist.—Chas. Ayres, M.B. Ch.M.

Honorary Neurologist.—Andrew Davidson, M.D.

Honorary Assistant Surgeons.—Wm. Chas. Grey, M.B. M.S.; Piero Fiaschi, M.R.C.S., Eng.; and James Reiach, M.B., M.S.

Honorary Masseur.—Mr. R. Bernard Job.

Resident Staff.

Medical Superintendent (resident).—R. A. Fox, M.B., Ch.M.

Junior Medical Officer (resident).—W. A. McDonald, M.B., Ch.M.

Assistant Superintendent—T. Walden Hanmer.

Dispenser.—W. Lunney.

Matron.—M. Sherwood.

Clerk.—A. T. Lord.

Land Area and Buildings.

This State Hospital and Asylum is situated about a mile from the Lidcombe railway station, in the Metropolitan District, and the area set apart for the purposes of the institution amounts to about 550 acres. The building used for hospital patients and asylum inmates are wholly modelled on the pavilion principle. The whole of the dormitories and buildings used by the patients and inmates are on the ground level. There are thirteen hospital divisions, accommodating 678 patients under active medical treatment and nursing care, in addition to the general dormitories, accommodating 743 asylum cases. The total inmate population of this institution at the close of 1915 was 1,321, as compared with 1,328 on 31st December, 1914.

Admissions and Discharges.

Number in on 1st January, 1915		1,328
Admitted during the year ended 31st December, 1915		3,591
		4,919
Discharged	3,067	
Died	531	
		3,598
Number in on 31st December, 1915		1,321
Number of hospital patients		674
Decrease in population compared with preceding year		7

The Rookwood State Hospital and Asylum is the largest institution of its kind in the Commonwealth, and has accommodation for 1,421 inmates. The average daily population during 1915 was 1,380, and 3,591 persons were admitted during the year.

The building accommodation is made up of hospital blocks and asylum or "yard" blocks. Patients on admission who require medical treatment are sent into the wards, whilst those who can be treated as outdoor patients, or require no medical attention, are sent into the "yard" portion of the institution.

Hospital Divisions.—The wards number thirteen, and are directly under the care of the resident medical staff. An attempt at classification within certain limits has been made.

There are two wards, EP1 and EP2, for epileptic and mental cases, with accommodation for 137.

Certifiable cases are transferred to the hospitals for the insane. There were 33 transfers during the year. Certain of the younger epileptics are at work in the garden under supervision.

MEDICAL REPORT FOR THE YEAR ENDING 31st DECEMBER, 1915.

The Medical Superintendent is able to show a report of special activity and progress during the year 1915.

A call for a special effort by the staff was necessary—not only on account of the reductions in the regular staff by enlistments—but also owing to added work undertaken, more particularly in the surgical section.

The staff, in co-operation with the Recruiting Depôt, under the ægis of the Board of Health, undertook the surgical treatment of a large number of temporarily rejected recruits with remediable surgical disabilities—in addition to the ordinary surgical work of the Institution. Many letters received from men on active service, and from the Liverpool Camp, show their gratitude to the Department for their successful enlistment.

No less than five members of the Honorary Medical Staff volunteered soon after the outbreak of the war, and have been continuously engaged on service, viz :—

Lieutenant-Colonel Nash, V.D., Australian Base Hospital.
Major W. C. Grey, Australian Base Hospital.
Captain Reiach, Australian Field Ambulance.
Captain Fiaschi, Australian Field Ambulance.
Dr. A. Wallace Weihen, engaged on local naval duties *vice* Dr. Brennand (active service.)

There were five additional enlistments from the Attendant's Staff during 1915, making a total of nine since the outbreak of hostilities.

Owing to the dearth of available trained men, these vacancies have had to be filled by men in many cases totally inexperienced. Lectures and practical teaching are given to these men, but the need is felt for the appointment of one of the Senior Attendants charged with the responsibility of seeing that these men receive adequate practical instruction in their daily duties.

One nurse and one clerk were also accepted for service during the year.

Two additional specialised departments were established during 1915—Massage and Dental.

The Dental Department began operations in June, under the care of Mr. W. J O'Kane, L.D.S., R.C.S.(Eng.), and the result of its activities and the justification for it. creation are shown in a report under specialised departments. No additional appointments were made to the Resident Medical Staff owing to the financial stringency caused by the war, and the dearth of available men, but we were able to obtain part-time service from the Junior Medical Officer, Liverpool State Hospital and Asylum.

The transfers from other hospitals numbered 142. Fifteen patients were certified as insane, and 18 were sent to the Reception House. Ninety-one (91) patients suffering from cancerous or venereal diseases were transferred to Liverpool State Hospital and Asylum.

There were 2 transfers to Royal Prince Alfred Hospital, and 10 each to the Asylums at Macquarie-street and Newington. Admissions sent to us by the country police numbered one hundred and twenty nine (129), only 17 beds were made available at Waterfall Sanitorium, for the transfer of patients suffering from pulmonary tuberculosis from this institution—in comparison with 65 allotted during the preceding year.

Additional accommodation, however, for sufferers from the "White Plague" was found by the erection in the Chest Ward grounds of two tents.

The demand for beds from these sufferers still overtaxes our resources, and there is urgent necessity for the creation in the State of further hospital accommodation for tubercular patients.

GENERAL WORK OF THE INSTITUTION UNDER THE CARE OF THE RESIDENT MEDICAL STAFF.

Dr. R. A. Fox, Medical Superintendent.

Dr. W. A. McDonald, Assistant Medical Officer.

Dr. S. McLennan, Junior Medical Officer (part-time service).

Patients in hospital divisions, 1st January, 1915...	649
Patients admitted for year ended 31st December, 1915 ...	2,567
Total number under treatment	3,216
Average daily number of patients in hospitals... ...	600

Mortality rate, 16·4 per cent.

The specialised departments, under the care of the visiting Honorary Medical Officers maintained their efficiency, and the results achieved are summarised hereunder, Special thanks are due to these gentlemen for the skill and energy displayed. We are indebted to the Microbiological Department for undertaking the testing of sputa, and for

for microscopical and bacteriological tests, and to Sydney Hospital for the X-ray diagnosis, and radium treatment of cases.

A series of Lectures on Practical Nursing was given to nurses and attendants from Lidcombe, Macquarie-street, and Newington Institutions.

The vaccination of all new admissions and segregation until vaccination was successful, was continued during the year, except in those cases where the operation was contra-indicated.

GENERAL SURGERY.

The Hon. J. B. Nash, M.L.C., Hon. Surgeon (absent on leave).

Dr. W. C. Grey, Assistant Surgeon (absent on leave).

Dr. Piero Fiaschi, Assistant Surgeon (absent on leave).

Dr. Reiach, Assistant Surgeon (absent on leave).

Dr. W. A. Ramsay Sharp, Acting Surgeon.

The Surgical Department was under the care of Dr. W. A. Ramsay Sharp, owing to the absence of the Honorary Surgeon on Active Service. The operations performed involved all varieties of surgical procedure, and the results achieved were satisfactory. The major operations increased from 173 during the preceding year, to 361. The increase was effected by the Honorary and Resident Staff undertaking the surgical treatment of 115 recruits. Additional equipment was provided in the Surgical Ward, but the projected erection of the new Operating Theatre was deferred consequent upon the necessity for rigid economy.

General Surgery—Major operations	249
Minor Operations	150
Eye Operations (Dr. Pockley)	60
Ear, Nose, and Throat (Dr. Dunn)	52
Total	511

List of Operations.

Amputations	9	Carcinoma of larynx	1
Osteotomy	2	Rodent ulcer	3
Osteo-myelitis	1	Cyst in mouth	1
Bone necrosis	7	Appendicitis	7
Cystoscopy	2	Cancer of the tongue	2
Fistula in ano	8	Epithelioma of the penis	1
Hæmorrhoids	12	Popliteal aneurism	1
Ischio rectal abscess	6	Fibroma of leg	1
Perineal fistulæ	6	Epithelioma of tonsils	3
Peri urethral abscess	1	Epithelioma of face	3
Scrotal fistula	1	Fibroma of lumbar region	1
Rectal polypus	1	Duodenal ulcer	1
Vesical fistula	2	Gall-stones	1
Enlarged prostate	1	Tubercular abscess of femur	1
Epithelioma of lip	8	Inguino-scrotal sinuses	1
Varicose veins	46	Hydatid	1
Inguinal hernia	45	Urethral stricture	10
Colotomy	1		
Hydrocoele	6	Total	249
Varicocoele	45		

DERMATOLOGICAL DEPARTMENT.

This department is under the direction of Dr. Chas. Ayres, and maintained its satisfactory standard.

The conditions treated and the results are tabulated hereunder :—

Seborrhœa	16	Scabies	7
Psoriasis	31	Ichthyosis	1
Eczema	109	Cellulitis	1
Sycosis barbæ	9	Lichen planus	2
Lupus erythematosus	3	Recklinghauses's disease	2
Tertiary syphilis	3	Folliculitis	1
Rodent ulcer	18		
Urticaria	3	Total number of cases treated	369
Varicose ulcer	25	Of which—	
Acne	7	Cured	292
		Relieved	20
Phthiriasis	69	Unrelieved	3
Intertrigo	15	Still under treatment	54
Leucoderma	1		369
Epithelioma of face	3		
Herpes zoster	9		

EAR, NOSE, AND THROAT DEPARTMENT.

(Dr. W. A. Dunn.)

We were without the services of an Honorary Ear, Nose, and Throat Surgeon during 1914, but Dr. Dunn undertook the work in December, 1914, and has continued weekly visits during 1915.

The results achieved were uniformly satisfactory.

The conditions seen and the operations performed are listed hereunder:—

Nose.

Syphilitic rhinitis	2
Rodent ulcer	1
Chronic rhinitis	3
Deflected septum	33
Compound fracture of nasal bones	1
Fracture of nasal bones	3
Hypertrophic rhinitis	5
Traumatic ulcer of septum	1
Injury to nose	1
Acute rhinitis	1
Maxillary sinusitis	1
Pan-sinusitis	1
Atrophic rhinitis	1
Hyperplastic rhinitis	1
Nasal polypus	2
Fracture of superior maxilla	1
Abscesses in frontal region	1
Septic necrosis	1
Ethmoiditis	1
Enlarged posterior ends of the inferior turbinates	2
Pus infection	34

Ear.

Otitis enterna	2
Nerve deafness	5
Otitis media	18
Cerumen	3
Chronic dry catarrh of the middle ear	7
Middle ear catarrh	2
Aural exostosis	1
Atresia of the external meatus	1
Syphilitic neuritis of the auditory nerve	1
Chronic mastoiditis	1
Eczema of the external auditory meatus	1
Eustachian catarrh	5

Throat.

Extra-laryngeal malignancy	1
Syphilitic laryngitis	2
Pharyngitis	1
Acute laryngitis	4
Tubercular laryngitis	15
Tonsils and adenoids	3
Laryngeal paralysis	1
Pharyngeal carcinoma	1
Chronic tonsilitis	6
Ossophagitis	3
Tonsilitis	1
Chronic laryngitis	2
Chronic pharyngitis	3
Tubercular glands of neck	1
Fibroma of the soft palate	1
Keratosis pharyngis	1
Epithelioma of the tonsil	1
Syphilitic pharyngitis	1
Cancer of the Œsophagus	2
Carcinoma of the larynx	1
Laryngeal growth	1

Operations.

Deflected septum	12
Cauterisation of tonsils	4
Carcinoma of larynx	3
Epithelioma of tonsil	6
Cauterisation of larynx	7
Nasal polypus	2
Multi-sinusitis	3
Laryngoscopy	3
Tonsils and adenoids	2
Glands of neck	2
Sastroscopy	1
Œsophagoscopy	2
Rodent ulcer	1
Plastic	1
Malignant palate	1
Frontal sinusitis	1
Amputation of epiglotsit	1
Total	52

DENTAL DEPARTMENT.

(Mr. W. J. O'Kane, L.D.S., R.C.S. (Eng.).

This department was established in June, 1915. The Total number of treatments carried out was two hundred and eight (208), including two cases of fracture of the jaw, and one of extensive alveolar necrosis.

The services of the Honorary Dentist have been much availed of by the Surgeons, more particularly in the preliminary treatment of patients for operations on the mouth.

Summary of Dental Operations.

Extractions	181
Extractions under chloroform	3
Adjustments	4
Gum treatment	2
Dressings	6
Examinations	6
Fillings	2
Scalings and cleanings	4
Total	208

MASSAGE DEPARTMENT.

Lieutenant R. B. Job (A.A.M.C.).

This department—originated in the latter weeks of the preceding year—continued active treatments during 1915 with satisfactory results.

Mr. Job has been granted a commission, and is to undertake massage work for the Military Department.

Summary of Treatments.

Cases carried forward from 1914	8
New cases, 1915	89
Number of treatments given	566
Results of treatment—	
Recovered	32
Relieved	29
Unrelieved	18
Cases carried forward into 1916	18

The Honorary Masseur paid 54 visits during 1915.

DISEASES OF THE EYE.

Hon. Ophthalmic Surgeons :—Dr. A. Wallace Weihen (absent on leave), Dr. Guy Pockley.

This work was continued during the whole year by Dr. F. Guy A. Pockley, and the report discloses an extremely successful year's work.

The scope and variety of the work of this department can be seen in the detailed list of conditions shown hereunder.

The operations performed numbered sixty-five (65), an increase of 39 on the preceding year.

Analysis of the work of the Ophthalmic Department for the year 1915.

Lids—	
Entropion	1
Ectropion	10
Trichiasis	6
Laceration	2
Ptosis	1
Distichiasis	1
Chalazion	4
Symblepharon	2
Blepharitis	7
Herpes opthalmicus	1
Rodent ulcer	2
Trachoma	4
Trachoma with pannus	4
Lachrymal apparatus—	
Epiphora	2
Acute dacrocystitis	4
Conjunctiva—	
Acute conjunctivitis	2
Chronic conjunctivitis	32
Pterygium	10
Hordeolum	1
Muscles—	
Convergent squint	2
Divergent squint	3
Paralytic squint	3
Nystagmus	3
Cornea—	
Macula	5
Nebula	6
Ulcer	7
Anterior staphyloma	1
Leucoma	15
Leucoma adherens	1
Keratitis	4
Iris—	
Selusio pupillæ	1
Iritis	9
Iris bombé	1
Aniridia	1
Lens—	
Cataract, morgagiun	3
,, immature	42
,, mature	10
Capsular membrane in aphalic eye	1
Optic nerve—	
Atrophy (primary)	8
,, (secondary)	9
Neuritis	2
Toxic ambly opia	7
Retina and choroid—	
Neuro-retinitis	1
Retinal detachment	3
Choroiditis	4
Macular	4
Retinitis proliferans	1
Globe—	
Phthisis bulbi	1
Panophthalmitis	3
Glaucoma—	
Acute (primary)	1
,, (secondary)	1
Chronic	5
Errors of refraction—	
Myopia	11
Myopic astigmatism	5
Hypermetropia	52
Hypermetropic astigmatism	5
Presbyopia	49
Orbit—	
Cellulitis	2
Total conditions	

List of Eye Operations during 1915.

Cataract—Extraction with iridectomy	18	Tarsectomy	2
Discission	8	Iridotomy	1
Lid repair	1	Advancement	2
Enucleation	6	Snellen's operation	4
Irisceration	2	Rodent ulcer	1
Pterygium	4	Excision of gas	3
Entropion	1	Optical iridectomy	7
Glaucoma—Iridectomy	2		
Sclero-corneal trephine	3	Total	65

List of Staff for Active Service.

Hon. Medical Staff previously tabulated, Lieutenant Bernard Job (Hon. Masseur). Attendants.—W. McKay, W.G. Jones, F. Bugden, W. E. Simpson, G. R. McLintock, J. H. Piercy, J. A. Cropley, H. W. Dancey, T. A. Ellis. Nurse S. McKern, Clerk A. T. Lord.

ROBERT A. FOX.

9.—STATE HOSPITAL AND ASYLUM FOR MEN, LIVERPOOL.

REPORT OF THE SENIOR MEDICAL SUPERINTENDENT FOR THE YEAR ENDED 31st DECEMBER, 1915.

Staff.

Senior Medical Superintendent.—J. A. Beattie, L.K.Q.C.P., Irel., L.R.C.S., Irel.

Junior Medical Officer.—S. McLennan, M.B., M.Ch.,

Honorary Surgeon, Ear and Throat.—R. Arthur, M D., M.L A.

Honorary Ophthalmologist.—E. C. Temple Smith, M.B., B.S., M.R.C.S., Eng. L.R.C.P., Lon., F.R.C.S., Edin.

Matron.—L. Le Jeune.

Dispenser.—R. C. Rowe.

Assistant Superintendent.—R. J. Brown.

No of persons in residence on 1st January, 1915	590	
Admitted during year ended 31st December, 1915 ...	1,422	
		2,012
Discharged from 1st January, 1915, to 31st December, 1915	1,276	
Died from 1st January, 1915, to 31st December, 1915 ...	181	
		1,457
Number in residence on 31st December, 1915		555
Average daily number of inmates		594

Percentage of deaths 10·35.

Average age of deceased persons 66·28 years.

Total cost of maintenance and treatment of patients and inmates, £20,299 8s. 11¼d.

Average cost per head, £27.

REPORT OF THE CURRENT GENERAL WORK FOR THE YEAR 1915.

Medical and Surgical Work.

The refilling of the post of Junior Medical Officer in March gave promise of a notable advance in the Medical and Surgical section of the Institution work, and in the subsequent four months numerous operations requiring the administration of anæsthetics were performed.

The advantages of the appointment were, however, neutralised by the deeply regretted serious illness of Dr. Beattie, Senior Medical Superintendent, at the end of July, since when the medical duties have been carried out solely by Dr. McLennan, and consequently the more serious cases requiring operation have been of necessity transferred to the State Hospital, Lidcombe, minor cases only being dealt with here.

Lock Division.

The number of patients sent here for treatment in the Lock Wards increased to such an extent during the earlier months of the year that an additional small ward had to be diverted for their accommodation from those in use for general cases. During the past few months the number has slightly decreased, as the following figures will show :—

Number of cases in Wards on 1st January, 1915... ...	31	
Admitted from 1st January, 1915, to 31st December, 1915	264	
Total		295
Discharged between same dates	274	
Died	0	
Remaining in Hospital on 31st December, 1915		21

Cancer Division.

This division has also been inconveniently overcrowded throughout the year; tents having to be requisitioned to meet the needs of the excess numbers.

Number in Wards on 1st January, 1915	32	
Admitted from 1st January, 1915, to 31st December, 1915	121	
Total...		153
Discharged between same dates	54	
Died between same dates	53	
		107
Remaining under treatment on 31st December, 1915 ...		46

Dr

Ophthalmic.

Dr. Temple Smith, Honorary Ophthalmologist continues his visits with material advantage to the cases under his care.

General Wards.

All these wards have been continuously overcrowded, and it has been necessary to treat numerous cases in the general dormitories, which should have occupied hospital beds if space had permitted.

General Remarks.

The Dormitory accommodation has also been very severely taxed throughout the year, and the various shelter sheds had to be commandeered for sleeping purposes.

The number of persons who passed through the Institution (hospital section and dormitories) during the year (2,012), have been almost equal to the number for 1914 (2075), but the total number resident at 31st December, 1915, was slightly lower, being 555, as against 590 on 31st December, 1914.

Outside Work.

The Assistant Superintendent, Mr. R. J. Brown, reports that the outside work of the Institution has been generally well maintained by the inmate workmen under the guidance of the very limited supervising staff. Buildings generally have been kept in good repair, and the gardens and grounds immediately surrounding the Hospitals have been maintained in good order, and additional garden plots laid down.

The vegetable gardens continue to yield sufficient vegetables to supply the needs of the Institution, and on occasions to permit the sending of supplies to other Institutions of the Department.

Piggery.

The work in this branch has shown gratifying results, consequent on improvements in the stock by the purchases at the Royal Society's Agricultural Shows of 1914 and 1915, and also for the last few months on the receipt from the German Concentration Camp at Holdsworthy, of a very largely increased supply of food at the cost of cartage only. This extra feed has enabled the stock to be increased by breeding and purchases from 231 on 1st January, 1915, to 387 on 31st December, 1915, notwithstanding that during the year stock to the value of £1,512 has been sold. The net profit on the year's operations stands at £1,010, but the institution is prevented from reaping the fullest advantage from the industry by the restricted area of the present site.

A proposal has recently been submitted to purchase out of the accumulated profits from the sale of pigs the more roomy areas near the Septic Tanks for fresh piggery and stable sites.

Domestic Work.

The Bakery, Kitchen, Laundry, Bathrooms, and other Services, have been efficiently conducted during the year; a very gratifying feature being the valuable assistance rendered to the Military Authorities in placing at their disposal the laundry equipment for two days a week. By this concession the Military have been able to dispose of all the laundry work of the Camp Hospitals at Liverpool and Casula, and also of enormous quantity of general washing from the Main Camp.

RETURN showing the number of inmates resident on the 31st December from 1892 to 1915.

1892.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.	1903.	1904.
836	887	785	905	934	819	910	957	844	795	662	806	873
1905.]	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1912.	1913.	1914.	1915.	—
850	798	714	716	668	628	604	591	550	579	590	555	—

* Numbers on the 30th of June of these years.

RETURN showing the number of inmates sheltered and under treatment in the Liverpool State Hospital during the year ended 31st December, 1915.

Resident on 31st December, 1914.	Admitted during year.	Total persons resident during year.	Discharged during year.	Deaths during year.	In residence on 31st December, 1915.
590	1,422*	2,012	1,276	181	Total. 555

* Individual admissions 1,158; readmissions 264.

RETURN showing the ages of all inmates sheltered in the State Hospital, Liverpool, on the 31st December, 1915.

Under 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 to 100.	Over 100.	Total.
0	13	25	55	104	170	123	58	7	0	Inmates. 555
0	10	17	28	59	68	71	49	6	0	In Hospital. 308

RETURN showing the ages of inmates who died during the year ended 31st December 1915.

Under 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 to 100.	Over 100.	Total.
3	1	13	36	49	47	29	1	2	181

RETURN showing the percentages of deaths also average age of deceased inmates during the year 1915.

Deaths.	Percentages.		Average Age.
	Individual.	Average.	
181	10·35	30·47	66·28

The number of inmates on the 31st December who had been resident in New South Wales less than five years was 16, made up as follows :—Resident under one year, 3; between one and two years, 1; two and three years, 4; three and four years, 3; four and five years, 5; and their ages were respectively—between 20 and 30 years, 5; 30 and 40 years, 3; 40 and 50 years, 4; 50 and 60 years, 2; 60 and 70 years, 2; total, 16.

RETURN showing the nature of diseases from which inmates suffered who died during the year ended 31st December, 1915.

	No.
Diseases of Respiration—	
Asthma	3
Bronchitis	9
Phthisis—Lungs, &c.	3
Pneumonia	4
Diseases of Circulation—	
Apoplexy	1
Cardiac disease	19
Aneurism of aorta	3
Diseases of Nervous System—	
Paralysis	9
Cerebral hæmorrhage	6
General Diseases—	
Cancer	67
Alcoholism	2
Nephritis	7
Senile debility	25
Chronic cerebral	1
Uræmia	1
Cirrhosis of Liver	3
Progressive muscular atrophy	1
Syphilis	1
Diarrhœa	2
Pernicious anæmia	2
Diabetes	1
Epilepsy	2
Cystitis	3
Chronic rheumatism	1
Paralysis agitans	1
Biliary calculi	1
Peripheral neuritis	1
Hæmophilia	1
Gastritis	1
	181

RETURN showing the nationality of inmates in the State Hospital and Asylum for the infirm sheltered in the Institution on 31st December, 1915.

Country.	No.	Country.	No.
New South Wales	115	Sweden	6
Other States of the Commonwealth	31	Norway	2
New Zealand	6	Denmark	4
England	155	Switzerland	1
Scotland	49	Italy	1
Ireland	109	India	4
Wales	9	Asiatics—China	27
Canada	4	West Indies	3
United States	5	Born at Sea	1
South Africa	2	France	7
Germany	6	Channel Islands	1
Belgium and Holland	2		
Portugal and Spain	1	Total	555
Russia and Finland	4		

STATE

STATE HOSPITAL AND ASYLUM, LIVERPOOL.

Dr. BAKEHOUSE Profit and Loss Account for the year ended 31st December, 1915. *Cr.*

	£ s. d.	£ s. d.	£ s. d.		£ s. d.	£ s. d.	£ s. d.
To Bread on hand, 31st December, 1914	.....	.....	6 1 3	By Bread issued, 140,075 lb. @ per 100 lb.	*0 13 0	910 9 9	
,, Flour ,, ,, ,,	.....	121 16 9		,, ,, ,, 59,455 lb. ,,	*0 17 3	512 16 0	
,, Sharps ,, ,,	.....	0 12 7		,, Cake ,, 11,372 lb. @ per lb	0 0 2	94 15 4	
,, Wheatmeal ,, ,,	.....	1 4 5		,, Buns ,, 167 doz.	0 0 9	6 5 3	
		123 13 9		,, Bread on hand, 2,319 lb. @ per 100 lb.	0 13 0	15 2 6	
2½ per cent. discount	.....	3 1 10					1,539 8 10
			120 11 11	,, Approximate advance on Parramatta contract rate to cover cost of carriage at 5 per cent.	.....	.....	76 19 5
,, Flour received, 157,000 lb.	11 17 6	933 7 8		,, Flour issued for domestic use :—			
,, ,, ,, 15,600 lb.	17 5 0	135 12 10		7,900 lb. @ per 100 lb.	11 17 6	46 18 1½	
,, Sharps ,, 220 lb.	10 0 0	1 2 0		3,150 ,,	17 5 0	27 3 4½	
,, ,, ,, 220 lb.	11 0 0	1 4 2		,, Flour in hand 44,425 lb., @ per 100 lb.	11 17 6	263 15 6	
,, Wheatmeal received 600 lb.	11 12 6	3 9 10		,, Sharps ,, 185 lb. ,, ,,	11 0 0	1 0 4	
,, ,, ,, 150 lb.	17 0 0	1 5 6		,, Wheatmeal in hand 375 lb. ,, ,,	11 17 6	2 4 6	
,, ,, ,, 450 lb.	11 17 6	2 13 6					341 1 10
,, Cartage, £4 5s. 6d.: Railway freight, £6 15s. 7d.	.....	11 1 1		,, Bags sold	.....	.....	15 15 11
			1,089 16 7				
,, Salaries and Wages	.....	.....	200 3 6				
,, Fuel, 30 tons @ 13s., less 2½ per cent.	.....	.....	19 0 3				
,, Malt, 740 lb., £10 13s. 6d.; Hops, 20 lb., £1 10s.	.....	.....	12 3 6				
,, Sugar, IA, 15½ bags 14s.	10 17 0	.....					
,, ,, No. 3, 17$\frac{10}{20}$ bags 12s. 6d.	10 14 3						
,, Proclaimed advance on sugar at per cwt. 4s. 6d.	0 12 7						
,, Treacle, 400 lb. 15s. 6d.	2 15 4						
,, Salt, coarse, 12 sacks 8s.	4 16 0						
,, Currants, 450 lb. 7d.	13 2 6						
,, Spice, 15$\frac{10}{16}$ lb. 1s.	0 15 7½						
,, Carraways, 50 lb. 1s. 3d.	3 2 6						
	46 15 9½						
3¼ per cent. discount	1 10 4½						
	45 5 5						
2½ per cent. discount	1 2 7						
		.....	44 2 10				
			1,491 19 10				
Credit	.....	.....	481 6 2				
			£1,973 6 0				£1,973 6 0

* State Bakery charges.

10.—STATE HOSPITAL AND ASYLUM FOR WOMEN, NEWINGTON.

REPORT FOR YEAR ENDED 31st DECEMBER, 1915.

Resident Medical Officer.—Ethel Remfrey Morris, M.B., M.Sc.
Assistant Superintendent.—William M. Megarvey.
Matron.—Letitia Harden.
Clerk and Storekeeper.—Charles G. Grove.
Dispenser.—Ethel M. Kirton.
Honorary Surgeon.—Walter Alexander Sharpe, M.B., F.R.C.S.
Honorary Ophthalmic Surgeon.—Guy Antill Pockley, M.B.
Honorary Ear, Throat, and Nose Surgeon.—R. Arthur, M.D., M.L.A.
Honorary Neurologist.—A. Davidson, M.D.
Visiting Medical Officer.—Francis Furnival, M.R.C.S.

Building and Situation.

The State Hospital and Asylum is situated on the southern bank of the Parramatta River, about three miles distant from the Auburn railway station.

The property is portion of the grant of 1,200 acres to John Blaxland in May 1807, and which was known as Newington Farm, covers an area of about 270 acres, including 70 acres of swamp land.

Newington House, the old home of the Blaxland family, which was Newington College for boys over thirty-five years ago, is used for the accommodation of the matron and nursing staff. The building is in a sound state of preservation and very suitable for nurses' quarters.

There has been great alteration in Newington since the time, about the year 1878, when the old women from the Benevolent Asylum, near the Sydney Railway Station, and the buildings at the top of King-street, were removed from the city and placed in a more suitable home under Matron Hicks on the Parramatta River. These inmates were destitute and infirm, but not in need of hospital treatment. However, it was soon found that, owing to the growth of the Asylum population, increased accommodation was necessary; and that what was necessary was a hospital for the treatment of the local sick and the chronic cases from the metropolitan and country hospitals. This institution has grown steadily in these respects. At the present time half the total number of inmates is under medical treatment, and many cases are provided for which would have otherwise had to be accommodated for long periods in one or other of the metropolitan hospitals.

Apart from two blocks, two stories high, constructed of brick, which are occupied by the more active inmates, the buildings used for the treatment of inmate women are designed on the pavilion plan. These pavilions are of modern construction, and compare favourably with similar provision made for the treatment of the sick in other public institutions throughout the State. The two-story blocks are provided with fire-escapes, and a night-watchman is employed for continuous out-door supervision throughout the night.

Total number in on 1st January, 1915	732
Admitted during the year ended 31st December, 1915	1,300
Total inmates	2,032
Discharged	1,097
Died	186
	1,283
Average daily number of persons in the institution for the year... ...	766
Remaining in on 31st December, 1915	749

Hospital Division.

In hospital 1st January, 1915	317
Admitted during the year	829
	1,146
Discharged during the year	823
Remaining in hospital 31st December, 1915	323
Average daily number of patients in the hospital division for the year...	339

There have been no changes in the Medical or Administrative Staff during the year.

No additional buildings were erected in 1915. Another hospital ward is urgently wanted to meet the increasing number of hospital patients. It appears impossible to manage for another year without extra accommodation, as the hospital division is now overcrowded, and the number of patients is likely to increase. No additional accommodation for inmates has been provided for over twenty years. Recently provision

had to be made for the reception of twenty venereal cases that could not be accommodated in the metropolitan hospitals. A special ward should be erected for these patients, so that they may be effectively isolated from the other patients.

REPORT OF RESIDENT MEDICAL OFFICER FOR YEAR 1915.

During the year there has been a considerable increase in the number of cases requiring hospital treatment, with the result that senile cases have had to be sent to the yard in order to relieve the congestion, and yard dormatories used for hospital purposes. Both the hospital and pavilions are greatly overcrowded. New and up-to-date buildings and equipment are urgently required.

Towards the end of the year it was decided that lock cases were to be admitted to the hospital, but so far means of isolation have not been provided.

We are indebted to the Microbiological Laboratory for the examination of specimens submitted from time to time.

During 1915 1,747 patients were treated. The diseases dealt with were as follows :—

(1) In-patient Division.

A.—General Diseases.

Measles	3
Influenza	14
Erysipelas	3
Acute gastro-enteritis	1
Tuberculosis—lungs	48
hip	1
spine	3
kidney	1
Syphilis—primary	5
secondary	8
tertiary	42
congenital	1
Gonococcus infection	6
Cancer—lip	2
face	5
throat	1
stomach	6
rectum	3
bladder	1
female genital organs	15
breast	10
rodent ulcer of face	1
Abdominal neoplasm	2
Tumour of breast (undefined)	1
Acute rheumatism	2
Chronic rheumatism	43
Diabetes	4
Anæmia	18
Pyæmia	1
Debility (including alcoholic)	58
Myxodema	1
Rheumatoid arthritis	6
Gout	1
	317

B.—Diseases of Nervous System and Organs of Special Sense.

Acute meningitis	1
Myelitis	2
Paresis	2
Paralysis	15
Paraplegia	7
Hemiplegia	30
Paralytic stroke	6
Neuralgia and neuritis	10
Sciatica	1
Herpes zoster	2
Paralysis agitans	3
Locomotor ataxia	1
Epilepsy	24
Chorea	3
Neurasthenia	10
Hysteria	1
Melancholia	2
Feebleminded	46
Amentia	3
Deafness	1
Dumb	1
Blindness	15
Amnesic aphasia	1
Acute trachoma	6
Chronic conjunctivitis	2
	195

C.—Diseases of Circulatory System.

Organic diseases of the heart	41
Arterio-sclerosis	4
Endarteritis	4
Cerebral hæmorrhage	2
Varicose veins and hæmorrhoids	9
Phlebitis	3
	63

D.—Diseases of the Respiratory System.

Nasal hæmorrhage	1
Laryngitis	2
Bronchial catarrh	1
Acute bronchitis	14
Chronic bronchitis	52
Broncho-pneumonia	6
Asthma	15
Pleurisy	3
Gangrene of lung	1
	95

E.—Diseases of the Digestive System.

Pyorrhœa alveolaris	3
Tonsilitis	5
Gastritis (including alcoholic)	70
Hyperemesis gravidarum	1
Intestinal stasis	1
Constipation	17
Diarrhœa	17
Colotomy (post-operative)	1
Jaundice	1
Cirrhosis of liver	2
Perihepatitis	1
Hydatid (post-operative)	1
Umbilical hernia	4
	124

F.—Non-venereal Diseases of Genito-urinary System and Adnexa.

Cystitis	8
Tumour of kidney (undefined)	1
Chronic nephritis	7
Ovaritis	1
Ovarian cyst	1
Salpingitis	2
Endometritis	1
Metritis	2
Menorrhagia	4
Metrorrhagia	2
Dysmenorrhœa	1
Uterine fibroid	1
Miscarriage	1
	32

G.—Diseases of the Skin and Cellular Tissue.

Verminous	5
Scabies	2
Pediculi capit	1
Ringworm	1
Dermatitis	1
Erythema	3
Pruritis vulvæ	3
Impetigo	1
Psoriasis	2
Eczema	19
Sebaceous cyst	1
Witlow	1
Abscesses	5
Furunele	1
Barcoo	1
Bed sores	4
Traumatic ulcers on legs	29
Varicose ulcers on legs	38
Other ulcers	6
Gangrene of foot	2
	126

H.—Diseases of the Bones and Joints.

Bunion	1
Amputation	1
Synovitis of knee	3
	5

I.—Malformations.

Talipes	1

J.—Infancy.

Neglect	1

K.—Old Age.

Senility	216

L.—Injuries.

Scalds	2
Burns	2
Sprains	10
Bruises	5
Fractures	17
Dislocations	3
Septic wounds	9
Scalp and face injuries	7
	55

M.—Ill-defined Diseases.

Heart failure	3
Destitution	4
Anorexia	1
Hunger	2
Neglect	2
Backache	2
Cripple	2
Malingerer	1
Observation	5
Convalescence	2
Coroner's case	1
	25

SUMMARY.

General Diseases	317
Diseases of Nervous System and of the Organs of Special Sense	195
Diseases of the Circulatory System	63
Diseases of the Respiratory System	95
Diseases of the Digestive System	124
Non-venereal Diseases of the Genito-urinary System and Adnexa	32
Diseases of the Skin and Cellular Tissue	126
Diseases of Bones and Joints	5
Malformations	1
Infancy	1
Old age	216
Injuries	55
Ill-defined Diseases	25
Total	1,255

(2) OUT-PATIENT DIVISION.

Number of patients treated, 601. Number of visits, 1,659.

The diseases treated were as follows :—

A.—General Diseases.

Anæmia	13
Debility (including alcoholic)	57
Erysipelatous condition of leg	1
Acute gastro-enteritis	1
Influenza	48
Phthisis	14
Measles	1
Chronic rheumatism	29
Gout	1
Syphilis	2
Carcinoma of breast	1
Myxodema	1
	169

B.—Diseases of the Nervous System and Organs of Special Sense.

Paralysis	5
Hemiplegia	1
Neuralgia and Neuritis	12
Sciatica	4
Lumbago	1
Feebleminded	3
Epilepsy	21
Headache	8
Deafness	2
Partial blindness	1
Neurasthenia	4
Insomnia	2
	64

C.—Diseases of the Circulatory System.

Organic diseases of the heart	21
Aortic aneurism	1
Arterio-sclerosis	1
Varicose veins and hæmorrhoids	20
Retinal hæmorrhage	1
	44

D.—Diseases of the Respiratory System.

Nasal catarrh	1
Acute bronchitis	18
Chronic bronchitis	29
Pleurisy	1
Pleurodynia	4
Hæmoptysis	1
	54

E.—Diseases of the Digestive System.

Pyorrhœa alveolaris	14
Dentagra	10
Dental abscess	4
Tonsilitis	14
Gastritis (including alcoholic)	79
Diarrhœa	11
Constipation	73
Biliousness	1
Hydatid of liver (post operative)	1
Jaundice	1
Intestinal intoxication	1
Hernia	5
Anorexia	15
	229

F.—Non-venereal Diseases of Genito-urinary System and Adnexa.

Cystitis	8
Dysuria	1
Chronic nephritis	5
Dysmenorrhœa	1
Metrorrhagia	1
Erosion of uterine cervix	1
Prolapse of uterus	2
	19

G.—Diseases of Skin and Cellular Tissue.

Carbuncle	2
Sebaceous cyst	2
Eczema	7
Furuncle	1
Corns	1
Ulcers	7
Pruritis	1
Seborrhœa capit	1
	22

H.—Old Age.

Senility	35

I.—Injuries.

Fractures, bruises, sprains and other injuries	26

J.—Ophthalmic Cases.

Acute trachoma	21
Chronic trachoma	9
Cataract	2
Diplopia	1
	33

SUMMARY.

General Diseases	169
Diseases of the Nervous System and Organs of Special Sense	64
Diseases of Circulatory System	44
Diseases of Respiratory System	54
Diseases of Digestive System	229
Non-venereal Diseases of Genito-urinary System and Adnexa	19
Diseases of Skin and Cellular Tissue	22
Old age	35
Injuries	26
Ophthalmic cases	33
Total	695

(3) OPERATIONS.

Major :—

Tarsectomy	2	Lumbar puncture	1
Cataract extraction	1	Reduction of dislocations	2
Extirpation eye socket	1	Minor	135
Sequestrectomy	1		
Dilation and curettage	2	Total	145

(4) OPHTHALMIC DIVISION.

During the year 47 cases have been treated, including refraction, medical, and surgical cases. The prevalence of trachoma amongst the asylum patients would justify the setting apart of an isolation ward, in which these cases might be treated.

(5) DEATHS.

The number of deaths during the year was 186. The causes were as follows :—

1. *General Diseases.*

Tuberculosis—lungs	13
hip	1
Carcinoma—lip	1
face	2
stomach	6
rectum	2
female genital organs	4
breast	6
Abdominal neoplasm	2
Pernicious anæmia	4
Septicæmia	2
Pyæmia	1

2. *Diseases of the Nervous System.*

Paralysis	1
Paralytic stroke	1
Hemiplegia	7
Paraplegia	1
Myelitis	2
Acute meningitis	1
Paralysis agitans	1
Cerebral softening	1

3. *Diseases of the Circulatory System.*

Organic heart diseases	15
Cerebral hæmorrhage	4

4. *Diseases of Respiratory System.*

Acute bronchitis	1
Chronic bronchitis	2
Bronchitis (not specified)	2
Broncho-pneumonia	1

5. *Diseases of the Digestive System.*

Cirrhosis of the liver	2
Gastritis	1
Diarrhœa	3

6. *Diseases of Genito-urinary System.*

Chronic nephritis	2

7. *Diseases of Skin and Cellular Tissue.*

Gangrene	2

8. *Old Age.*

Senility	75

9. *Ill-defined Diseases.*

Syncope	7
Heart failure	6
Exhaustion	3
Coroner's case	1
Total	186

= 10·6 per cent. of cases treated.

E. R. MORRIS, M. Sc., Melb.

REPORT OF THE ASSISTANT SUPERINTENDENT.

The area of 123 acres resumed for the use of this institution last year to replace land taken by the Meat Industry and Abattoirs Board has been fenced, and portion of it ploughed and planted with grass seed.

Five hundred trees to form an avenue on each side of the roadway have been planted.

Since July last a sand dredge has been employed by the Harbour Trust Department in filling up the old salt pans to above high-water level. This area was previously reclaimed, but trouble was experienced owing to the embankment breaking away. When this work is completed about 30 acres will be made available for use for grazing and cultivation purposes.

Farming Operations.

An exceptionally dry season has been experienced and farming operations have been somewhat retarded. However, with the assistance of irrigation it has been possible to produce a fair quantity of forage.

Fodder produced:—Ensilage, 75 tons; green fodder, 70 tons; farm sales, £353 7s. 11d.; milk production, 47,946 gallons; milk production cost, 9¾d. per gallon; vegetables produced, 50,096 pounds; tallow sales, £173 1s. 1d.

W. MEGARVEY.

11.—STATE ASYLUM FOR AGED AND INFIRM MEN, GEORGE-STREET, PARRAMATTA.

Visiting Medical Officer.—Dr. W. S. Brown.

Matron.—Mrs. M. Peake.

Admissions and Discharges.

Number of inmates in residence on 31st December, 1914... ...		265
Number of inmates admitted from 1st January, 1915, to 31st December, 1915		893
Total under treatment for 1915...		1,158
Discharged	969	
Died	—	
		969
Number of inmates on 31st December, 1915		189
Average daily number in residence...		225
Expenditure for the Year		£4,464

Report of Operations for Year 1915.

The old Swag Store and Library, which were in a very dilapidated condition, have been pulled down, and new brick buildings, with concrete floors, and containing a disinfecting room, have been erected in their place. All of the work has been performed by inmate labour.

The main buildings have been whitewashed from time to time, and the interiors, exteriors, and roofs painted.

Workshops.—Following are the number and value of articles made at the Asylum during the year :—

	£	s.	d.
34 Tweed Coats, at 10s. 6d.	17	17	0
31 Tweed Vests, at 4s.	6	4	0
64 Tweed Trousers, at 7s. 9d.	24	16	0
234 Corduroy Trousers, at 5s. 6d.	64	7	0
82 Beaverskin Trousers, at 6s.	24	12	0
136 Drawers, flannel, at 3s.	20	8	0
110 Shirts, flannel, at 3s. 6d.	19	5	0
63 Shirts, yard, at 20s. 6d. per doz.	5	7	8
2 Overcoats, at 15s.	1	10	0
287 pairs Boots, at 5s. 6d. per pair	78	18	6
	£263	5	2

The Visiting Medical Officer, Dr. W. S. Brown, visited the Institution on 261 occasions, and attended to 1,905 patients, of whom 182 were transferred to other Institutions for hospital treatment.

Regular monthly visits at night were made by the Chief Attendant.

The conduct and discharge of duties by the staff has been satisfactory.

M. PEAKE,
Matron.

12.—STATE ASYLUM FOR THE BLIND, AND FOR MEN SUFFERING FROM DEFECTIVE SIGHT AND SENILITY, MACQUARIE-STREET, PARRAMATTA.

Visiting Medical Officer.—Dr. W. S. Brown.

Matron.—Miss Mary Crimes.

There is very little to add to previous reports. The whole of the buildings—administrative portion and dormitories—have been thoroughly renovated and painted, and are, considering the age of the buildings, in a fair state of preservation.

The vegetable garden has been fairly productive, yielding 10,851 lb. of green vegetables for the use of the inmates. As the value of these vegetables at Contract prices is nearly £70, the result is highly satisfactory, considering the long spell of dry weather.

The sewerage and fire services are satisfactory.

Admissions and Discharges.

Number of inmates on the 1st January, 1915	186
Admitted during the year ended 31st December, 1915	879
Total number of inmates for 1915	1,065
Discharged during the year	895
Number of inmates in the Institution on 31st December, 1915...	170
Decrease compared with previous year	16
Average daily number of inmates for 1915	187
Total daily average of Blind Inmates	36

Inmates' clothing, with the exception of hats and boots, have been made in the Institution by inmate labour at a considerable saving to the Department.

Bakery.

The bakery has supplied the following Institutions with first quality bread, viz., Rookwood Asylum, Newington Asylum, George-street, Macquarie-street, and Cottage Homes for Aged Couples, Parramatta, at a low price, the object being to supply those Institutions with a first class article at as low a price as possible. The work, as hitherto, has been carried out by two Official Tradesmen bakers with the assistance of inmate labour. The following will show the magnitude of the work :—

Malted White and Brown Bread.

	lb.
Bread baked during the year	828,378
Cake baked during the year	47,164
469½ dozen Buns for Good Friday	4,632
Total Production	880,174

The principal item "bread" was distributed as follows :—

	lb.
Rookwood State Hospital and Asylum	454,276
Newington Hospital and Asylum	225,804
George-street Hospital and Asylum	75,886
Macquarie-street Hospital and Asylum	64,534
Cottage Homes for Aged Couples	6,004
Total	826,504

The bread is distributed daily, and the cake once a week.

General.

The Visiting Medical Officer professionally visited the Institution on 336 occasions, during which he saw 1,842 patients, and transferred 312 to other Institutions for hospital treatment. There were not any serious cases of illness in the Institution during the year.

During 1915 several parties of ladies and gentlemen visited the Institution and entertained the inmates with vocal and instrumental concerts, which were greatly appreciated by the inmates, especially the blind.

The Chief Attendant paid monthly night surprise visits, and reported satisfactorily.

The conduct of the staff during the year has been satisfactory.

M. CRIMES,
Matron.

MACQUARIE-STREET ASYLUM BAKERY, PARRAMATTA.

PROFIT AND LOSS ACCOUNT for the year ended 31st December, 1915.

	£ s. d.	£ s. d.		£ s. d.	£ s. d.
To Balance on hand, 31st December, 1914	229 6 1		By Value of flour and wheatmeal on hand, 31st December, 1915	.....	91 14 8
„ Flour, wheatmeal, and sharps purchased during the year 1915	3,851 13 7	4,080 19 8	„ Bread baked, 480,226 lb. @ 1¼d.	2,501 3 6	
			„ „ 348,152 lb. @ 1½d.	2,175 19 0	
„ Ingredients used in making yeast viz., malt, hops, sugar, and stout	.....	66 15 6	„ Cake baked, 47,164 lb. @ 1½d.	294 15 6	
			„ Buns for Easter 469½ doz. @ 9d.	17 12 2	
					4,989 10 2
„ Ingredients used in making bread, cake, and buns, viz., currants, carraways, sugar, coarse salt, treacle, and butter	.....	141 1 10	„ Flour sent to other Asylums	.....	338 13 8
			„ Malt and hops sent to other Asylums	.....	12 10 10
„ Officers salaries	459 0 0		„ Sale of empty bags	.....	81 15 0
„ Gratuities to inmate bakers, clerk and woodcutter	84 6 0		„ Empty bags on hand	.....	4 12 1
		543 6 0			
„ Wood consumed in bakery	80 0 0				
„ Gas consumed in bakery	7 7 2				
„ Miscellaneous expenses, including repairs, water, tallow, &c.	60 0 0				
		147 7 2			
To Net Profits	.....	539 6 3			
		£5,518 16 5			£5,518 16 5

13.—COTTAGE HOMES FOR AGED COUPLES, PARRAMATTA.

Cottage homes for aged couples at Parramatta were erected upwards of twenty-three years ago by the State Government. There were in all twenty cottages situated in the town of Parramatta, facing the railway line, and close to the station.

Prior to the introduction of the Old-age and Invalidity Pensions Act, the cottage system of dealing with aged couples served a useful and humane purpose. The payment of a pension, however, offered more congenial conditions of life to old married people who were without means, and incapable of self-support. The cottages imposed restraint and supervision, and although they were furnished and rent free, with medicines and medical advice, and every other reasonable requirement supplied by the State, there were not many applicants for them after the Pensions Act came into force, and for several years a number of the cottages remained empty.

The couples who were already in residence had become accustomed to the conditions, and did not wish to leave, but when the cottages became vacant, inquiries made by the Department met with no response from respectable old folks in straitened circumstances. As this system of cottage residence was seemingly much less popular with old couples than allowing them to choose their own place of residence and take advantage of pension payments, it was decided to discontinue the cottages as a separate institution from 1st September, 1915, and from that date the remaining six couples were placed under the supervision of the Matron of the Macquarie-street Asylum, Parramatta. The cottages will eventually either be sold or diverted to other public uses.

SUMMARY.

14.—SUMMARY.

STATE HOSPITALS AND ASYLUMS FOR THE INFIRM—STATISTICAL TABLES.

No. 1.—RETURN showing the Number of Inmates sheltered and under treatment in the State Hospitals and Asylums during the year ended 31st December, 1915.

	In Asylum 31st December, 1914.		Admitted during the year.		Discharged.		Died.		In Asylum, 31st December, 1915.		
	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Total.
Cottage Homes*	11	12	...	...	...	...	...	...	...	..	...
George-street Asylum	265	...	893	...	969	...	..	...	189	...	189
Liverpool State Hospital	590	...	1,422	...	1,276	...	181	...	555	...	555
Macquarie-street Asylum	186	...	879	...	890	...	5	...	170	...	170
Newington State Hospital	90	642	166	1,134	173	924	...	186	83	666	749
Rookwood State Hospital	1,328	..	3,591	...	3,067	...	531	...	1,321	...	1,321
Waterfall Sanatorium	308	86	510	252	397	160	113	63	302	121	423
	12,778	740	7,461	1,386	6,772	1,084	830	249	2,620	787	3,407

* Discontinued as separate Institution from 1st September, 1915.

No. 2.—RETURN showing the Number of Inmates in the State Hospitals and Asylums on the 30th June from 1904–1912; and on 31st December, from 1912–1915.

	1904.	1905	1906.	1907.	1908.	1909.	1910.	1911.	30th June, 1912.	31st Dec., 1912.	31st Dec., 1913.	31st Dec., 1914.	31st Dec., 1915.
Cottage Homes*	43	43	45	42	43	42	35	29	32	32	30	23	*
George-street Asylum	951	951	821	782	709	434	249	191	175	245	215	265	189
Liverpool State Hospital	868	850	798	714	716	668	628	604	591	550	579	590	555
Macquarie-street Asylum	314	298	282	263	260	241	232	196	168	151	149	186	170
Newington State Hospital	812	805	797	771	800	785	759	769	741	728	706	732	749
Rookwood State Hospital	1,301	1,300	1,316	1,254	1,319	1,434	1,440	1,299	1,272	1,173	1,229	1,328	1,321
Waterfall Sanatorium	..	..	..	..	..	200	247	259	324	351	382	394	423
Total	4,289	4,247	4,059	3,826	3,847	3,804	3,590	3,347	3,303	3,230	3,290	3,518	3,407

* Discontinued as separate Institution from 1st September, 1915.

No. 3.—RETURN showing the Percentages of Deaths, also Average Ages of Deceased Inmates during the year ended 31st December, 1915.

Institution.	Deaths.	Death-rate per 100 persons dealt with.	Average Age.
Cottage Homes*	.....	....	.....
George-street Asylum	.....	.....	.....
Liverpool State Hospital	181	10·35	66·28
Macquarie-street Asylum	5	2·67	71·
Newington State Hospital	186	15·1	68·27
Rookwood State Hospital	531	40·2	62·
Waterfall Sanatorium	176	15·23	35·

* Discontinued as separate Institution from 1st September, 1915.

No. 4.—RETURN showing Ages of Inmates who were in the State Hospitals and Asylums on 31st December, 1915.

Institution.	Under 20 years.	21 to 30.	31 to 40.	41 to 50.	51 to 60.	61 to 70.	71 to 80.	81 to 90.	91 to 100.	Over 100.	Total.
Cottage Homes*	...	...	...	...	...	...	...	...	...	...	...
George-street Asylum	...	...	...	6	48	80	51	4	...	...	189
Liverpool State Hospital	...	13	25	55	104	170	123	58	7	...	555
Macquarie-street Asylum	...	2	4	11	36	71	40	5	1	...	170
Newington State Hospital	14	29	57	91	170	187	142	51	8	...	749
Rookwood State Hospital	6	23	84	151	300	387	253	110	7	...	1,321
Waterfall Sanatorium	27	81	85	84	77	54	14	1	...	...	423
Total	47	148	255	398	735	949	623	229	23	...	3,407

* Discontinued as separate Institution from 1st September, 1915.

No. 5.—RETURN showing the Ages of Inmates who Died in the State Hospitals and Asylums during the year ended 31st December, 1915.

Institution.	Under 20.	Under 30.	Above the age of—								Total.
			30.	40.	50.	60.	70.	80.	90.	100.	
Cottage Homes	...	...	...	...	...	...	...	...	...	...	...
George-street Asylum	...	...	...	...	...	...	...	...	...	...	...
Liverpool State Hospital	...	3	1	13	36	49	47	29	1	2	181
Macquarie-street Asylum	...	...	...	...	...	1	4	...	...	...	5
Newington State Hospital	2	2	4	15	24	34	61	36	7	1	186
Rookwood State Hospital	3	13	32	48	99	119	147	64	6	...	531
Waterfall Sanatorium	11	62	41	33	23	5	1	...	...	...	176
Total	16	80	78	109	182	208	260	129	14	3	1,079

No. 6.—Diseases from which the Inmates who died suffered during the year ended 31st December, 1915.

	Cottage Homes. *	George-street.	Macquarie-street.	Liverpool.	Newington.	Rookwood.	Waterfall.	Total.
General Diseases—								
Alcoholism, Acute	.....	.....	... ..	2	.....	4	.....	6
Anæmia	.....	.....	.....	2	4	4	.....	10
Cancer	.....	.....	.....	67	21	23	.....	111
Cystitis	.....	.....	.....	3	.....	11	.....	14
Diabetes, Mellities	.....	.....	.....	1	.....	2	.....	3
Gangrene	.....	.....	.....	.....	2	3	.....	5
Gout	.....	.....	.....	.....	.....	3	.....	3
Influenza	.....	.....	.....	.....	.....	1	.....	1
Miscellaneous	.....	... ..	.....	6	6	2	.....	14
Phthisis	.....	.....	.....	3	13	97	175	288
Rheumatism	.....	.....	.....	.....	.....	3	.....	3
Rheumatism, Arthritis	.....	.....	.....	1	.....	7	.....	8
Syphilis	.....	.....	.....	1	.....	1	... ..	2
Other General Diseases—								
Cerebral Tuberculosis	.....	.....	.....	.....	.....	1	.....	1
Tubercular Spine	.....	.....	.....	.....	.....	4	.....	4
Septicæmia	.....	.....	.....	.....	.....	2	.....	2
Diseases of the Nervous System—								
Cerebral Hæmorrhage	.....	.....	3	6	4	34	.....	47
Cerebral Softening	.....	.....	.....	.....	1	.....	.....	1
Chronic Brain Disease	.....	.....	.....	1	.....	3	.....	4
Chronic Chorea	.....	.....	.....	.. ...	.....	4	.....	4
Dementia	.....	.....	.....	.....	.....	45	.....	45
Epilepsy	.....	.....	.....	2	.....	6	.....	8
General Paralysis of the Insane	.....	.....	.....	.....	... ..	3	.....	3
Hemiplegia	.....	.....	.....	.....	7	.....	.....	7
Meningitis, Acute	.....	.....	.....	.....	1	.....	.....	1
Myelitis	.....	.....	.....	.....	2	.....	.....	2
Neuritis	.....	.....	... ..	.....	.....	2	.....	2
Paralysis	.....	.. ...	.....	9	3	12	.....	24
Paraplegia	.....	.....	.....	.....	1	.....	.....	1
Tabes Dorsalis	.....	.....	.....	.....	.....	7	.....	7
Diseases of the Circulatory System—								
Aneurism	.....	.....	.....	3	.....	4	.....	7
Apoplexy	.....	.....	.....	1	.....	.....	.....	1
Cardiac	.....	.....	1	19	15	84	.....	119
Hodgson's Disease	.....	.....	.....	.....	.....	2	.....	2
Stoke Adams Disease (Heart block)	.....	.....	.....	.....	.....	2	.....	2
Diseases of the Digestive System—								
Appendicitis	.....	.....	.....	.....	.....	3	.....	3
Acute Hæmorrhagic Pancreatitis	.....	.....	.....	.....	.....	.....	1	1
Chronic Colitis	.....	.....	.....	... ..	.....	1	.....	1
Cirrhosis	.....	.....	.....	3	2	3	.....	8
Diarrhœa	.....	.....	.....	2	3	15	.....	20
Dyspepsia	.....	.....	.....	.....	.....	1	.....	1
Gastritis	.....	.....	.....	.....	1	1	.....	2
Gall Stones	.....	.. ...	.....	.....	.. ...	1	.....	1
Non-venereal Diseases of the Genito-urinary System—								
Chronic Nephritis	.....	.....	.....	8	2	39	.....	49
Enlarged Prostate	.....	.....	.....	.....	.....	9	.....	9
Fistula	.....	.....	.....	.....	.....	6	.....	6
Senility	.....	.....	1	25	75	29	.....	130
Diseases of Respiratory System—								
Asthma	.....	.....	.....	3	.....	6	.....	9
Bronchitis	.....	.....	.....	9	5	25	.....	39
Pneumonia	.....	.....	.....	4	1	11	.....	16
Tumour of Lung	.....	.....	.....	.....	.....	1	.....	1
Diseases of the Skin and Cellular Tissue—								
Carbuncle	.....	.....	.....	.....	.....	1	.....	1
Diseases of the Bone—								
Ostitis deformans	.....	.....	.....	.....	.....	1	.....	1
Diseases of the Brain—								
Cerebral Tumour	.....	.....	.....	.....	.....	1	.....	1
Ill-defined Diseases—								
Coroner's Case	.....	.....	.....	.....	1	.....	.....	1
Exhaustion	.....	.....	.....	.....	3	.....	.....	3
Heart Failure	.....	.....	.....	.....	6	.....	.....	6
Syncope	.....	.....	.....	.. ...	7	.....	... ..	7
Violence—								
Accident	.....	.....	.....	.....	.....	1	.....	1
	.....	.....	5	181	186	531	176	1,079

* Discontinued as a separate Institution from 1st September, 1915.

No. 7.—NATIONALITY of Inmates sheltered in Asylums on 31st December, 1915.

	Cottage Homes.*	George-street.	Liverpool.	Macquarie-street.	Newington.	Rookwood.	Waterfall.	Total.
New South Wales	.....	28	115	33	289	347	174	986
Other States	.....	11	31	10	51	93	44	240
New Zealand	.....	1	6	1	10	6	8	32
England	.....	71	155	56	172	370	97	921
Scotland	.....	26	49	21	34	122	28	280
Ireland	.....	30	109	36	162	202	41	580
Wales	.....	1	9	1	5	10	4	30
France	.....	2	7	2	2	15	2	30
Russia	.....	.....	4	.....	.....	2	2	8
Poland	.....	.....	.....	.....	.....	1	.....	1
Sweden	.....	5	6	1	.....	16	4	32
Norway	.....	.....	2	.....	.....	9	.....	11
Denmark	.....	.....	4	.....	2	12	.....	18
Switzerland	.....	1	1	1	2	2	1	8
Italy	.....	.....	1	.....	.....	7	1	9
Spain and Portugal	.....	.....	1	.....	.....	1	.....	2
Belgium and Holland	.....	.....	.....	.....	.....	3	.....	3
Greece	.....	.....	.....	.....	.....	3	.....	3
Austria	.....	.....	.....	.....	.....	1	.....	1
Germany	.....	2	6	2	4	19	5	38
Finland	.....	1	.....	.....	.....	4	.....	5
Malta	.....	1	.....	.....	.....	1	.....	2
Gibraltar	.....	.....	.....	.....	.....	1	.....	1
Channel Islands	.....	.....	1	1	3	8	.....	13
Canada	.....	5	4	2	3	11	.....	25
United States of America	.....	2	5	1	3	10	3	24
West Indies	.....	.....	3	1	1	1	.....	6
South Africa	.....	.....	2	.....	.....	.....	.....	2
St. Helena	.....	.....	.....	.....	.....	1	.....	1
India	.....	.....	4	1	2	6	.....	13
Syria	.....	.....	.....	.....	.....	1	1	2
Asiatic	.....	2	27	.....	1	22	.....	52
Fiji	.....	.....	.....	.....	1	.....	.....	1
Born at Sea	.....	1	.....	.....	2	3	.....	6
Unclassified	.....	.....	.....	.....	.....	2	.....	2
Total	.....	190	552	170	749	1,312	415	3,398

* Discontinued as a separate Institution from 1st September, 1915.

No. 8.—RETURN showing the number of Inmates in the State Hospitals and Asylums on the 31st December, 1915, who have been resident in this State less than five years.

Institution.	Under 1 year.	Under 2 years.	Under 3 years.	Under 4 years.	Under 5 years.	Total.
Cottage Homes*	.....	.....	.....	.....	.....	.....
George-street Asylum	1	1	3	4	2	11
Liverpool State Hospital and Asylum	3	1	4	3	5	16
Macquarie-street Asylum	2	.....	.....	1	1	4
Newington State Hospital and Asylum	2	2	5	.....	.....	9
Rookwood State Hospital and Asylum	14	16	5	12	19	66
Waterfall Sanatorium	4	7	12	12	11	46
Total	26	27	29	32	38	152

* Discontinued as a separate Institution from 1st September, 1915.

No. 9.—RETURN showing the ages of Hospital Patients in the different Asylums on 31st December, 1915.

Institution.	Under 20.	20 to 30.	31 to 40.	41 to 50.	51 to 60.	61 to 70.	71 to 80.	81 to 90.	91 to 100.	Over 100.	Total.
Cottage Homes*	...	...	...	...	...	...	...	...	...	...	...
George-street Asylum	...	...	...	...	...	...	...	...	...	...	...
Liverpool State Hospital and Asylum.	...	10	17	28	59	68	71	49	6	...	308
Macquarie-street Asylum	...	...	...	...	...	...	...	...	...	...	...
Newington State Hospital and Asylum.	10	12	14	43	59	61	77	41	6	...	323
Rookwood State Hospital and Asylum.	5	18	60	81	140	145	120	70	3	...	642
Waterfall Sanatorium	27	81	84	73	53	23	4	1	...	...	346
Total	42	121	175	225	311	297	272	161	15	...	1,619

* Discontinued as a separate Institution from 1st September, 1915.

STATE HOSPITALS AND ASYLUMS FOR THE INFIRM.

DETAILED STATEMENT of Expenditure for the year ended 31st December, 1915.

	Cottage Homes for Aged Couples.*	George-street Asylum.	Liverpool State Hospital.	Macquarie-street Asylum.	Newington State Hospital.	Rookwood State Hospital	Waterfall Sanatorium.	Total.
Average daily population	....	225	594	187	766	1,384	414	3,570
		£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Rations	.....	1,917 0 10	7,625 17 7	5,441 7 4	7,058 1 5	15,981 3 11	7,737 14 8	45,761 5 9
Alcohol	.....	.....	287 14 8	6 16 7	136 13 4	191 15 8	12 0 2	635 0 5
Drugs	.....	.....	683 19 5	10 6 9	622 1 2	1,885 11 10	244 10 7	3,446 9 9
Disinfectants	....	2 6 3	18 14 5	20 11 6	14 16 8	12 10 3	56 4 5	125 3 6
Fuel	.....	110 17 7	530 19 4	307 12 4	854 0 5	2,097 7 10	388 11 8	4,289 9 2
Light	.....	59 1 4	174 13 2	69 10 10	22 4 3	33 6 5	214 18 0	573 14 0
Water	.....	134 9 0	.....	60 1 4	.....	323 14 0	264 0 7	782 4 11
Burials	.....	0 12 6	71 11 6	2 17 6	67 1 0	206 11 6	22 5 0	370 19 0
Hardware	.....	151 18 2	154 14 1	91 16 4	457 1 6	846 1 1	116 7 5	1,817 18 7
Clothing	.....	386 14 11	971 14 4	354 5 6	1,133 3 2	2,508 8 6	296 14 0	5,651 0 5
Fodder	.....	102 10 4	158 5 4	.....	1,755 0 6	1,738 7 0	294 17 6	4,048 18 8
Fowls	.....	69 19 10	.....	.....	.....	38 8 2	.....	108 8 0
Horses, Cows and Pigs	.....	.....	648 1 6	... .	... .	95 7 0	....	743 8 6
Insurance, Telephone and Postal Services, Postage and Stationery..	.....	20 12 4	38 6 3½	8 5 5	32 9 3	267 17 7	64 3 4	431 14 2½
Sundries	.....	6 9 4	289 10 6	7 17 10	100 5 7	.....	84 17 1	489 0 4
Petty Cash	.....	15 15 8	91 7 9	10 6 9	44 4 11	45 14 3	43 13 4	251 2 8
Salaries and Wages	.....	1,188 10 5	7,056 16 11	1,816 19 9	5,660 18 8	11,360 2 0	6,143 4 9	33,226 12 6
	.....	4,166 18 6	18,802 4 9½	8,208 15 9	17,958 1 10	37,632 7 0	15,984 2 6	102,752 10 4½
Stock on hand, 31st December, 1914 ..... *Add*	....	369 15 4	1,913 5 8¾	541 16 2	2,586 10 5	2,457 7 5	1,333 10 6	9,202 5 6¾
	.....	4,536 13 10	20,715 10 6¼	8,750 11 11	20,544 12 3	40,089 14 5	17,317 13 0	111,954 15 11¼
Stock on hand, 31st Dec., 1915, and Revenue Collections ... *Deduct*	.....	496 19 9	2,509 15 0¾	918 12 1	6,561 8 4	8,019 18 6	1,217 17 7	19,724 4 7½
	.....	4,039 14 1	18,205 15 5½	7,831 19 10	13,983 3 11	32,069 15 11	16,099 15 5	92,230 4 7½
Exchange adjustments ..... *Add*	.....	840 19 1½	813 2 10	170 10 8	1,675 4 5	3,345 1 3	1,190 17 6	8,035 15 9½
	.....	4,880 13 2½	19,018 18 3½	8,002 10 6	15,658 8 4	35,414 17 2	17,290 12 11	100,266 0 5
Exchange adjustment ..... *Deduct*	.....	270 16 8	89 14 0¼	5,126 7 4	1,509 5 11	1,157 4 2	52 19 2	8,206 7 3¼
	.....	4,609 16 6½	18,929 4 3¼	2,876 3 2	14,149 2 5	34,257 13 0	17,237 13 9	92,059 13 1¾
Rent, repairs, furniture, building, rail, and other expenses.....	.....	152 11 11	774 5 4	398 9 2	414 11 4	1,744 7 8	281 4 9	3,765 10 2
	.....	4,762 8 5½	19,703 9 7¼	3,274 12 4	14,563 13 9	36,002 0 8	17,518 18 6	95,825 3 3¾
Salaries and Expenses, Administrative Office	.....	94 10 9	249 11 7	78 11 5	321 17 0	581 10 3	173 19 0	1,500 0 0
	.....	4,667 17 8½	19,453 18 0¾	3,196 0 11	14,241 16 9	35,420 10 5	17,344 19 6	94,325 3 3¾
Cost per inmate	....	20 14 11½	32 15 0½	17 1 9	18 11 10	25 11 10	41 17 11	26 8 5

* Discontinued as a separate Institution from 1st September, 1915.

LIBRARY
OF THE
UNIVERSITY OF

STATE HOSPITALS AND ASYLUMS OF NEW SOUTH WALES.

Chart showing the Variation in the Total Inmate Population each Year since the Year 1890.

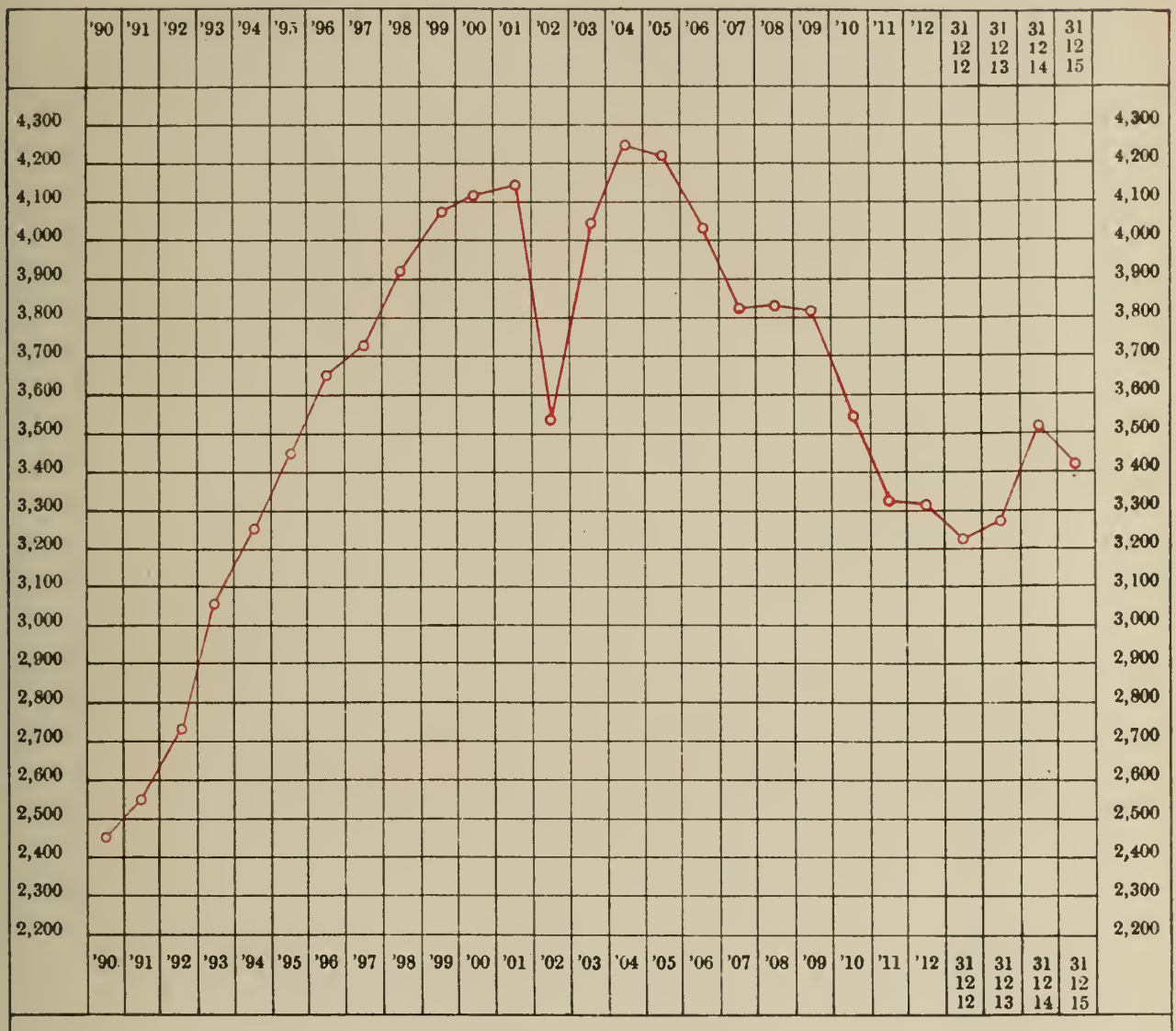
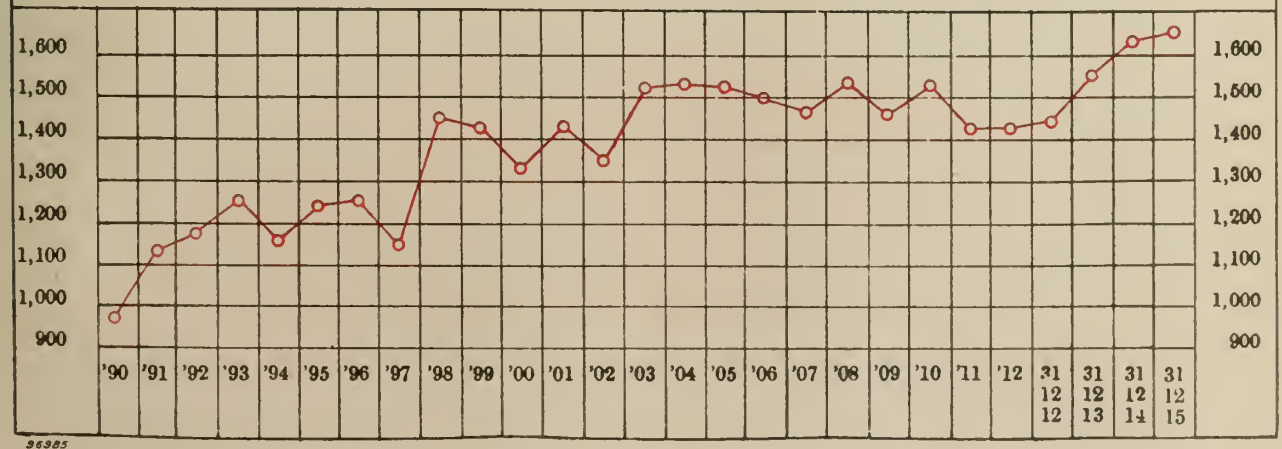


Chart showing the Variation from Year to Year amongst Hospital Patients only.



96385

LIBRARY
OF THE
UNIVERSITY OF ILLINOIS

PART V.

Sixth Report of the Microbiological Laboratory (Government Bureau of Microbiology) for the year 1915.

PART V.

Sixth Report of the Microbiological Laboratory (Government Bureau of Microbiology) for the year 1915.

The Principal Microbiologist to The Director-General of Public Health.

Microbiological Laboratory,
Department of Public Health, Sydney, July, 1916.

Sir,

I have the honour to submit for your information the accompanying Report of the Microbiological Laboratory dealing with the work performed during the year 1915.

In spite of the altered circumstances created by the war, the urgent work which the Laboratory has been called upon to perform has been as large as, and in some instances larger than, this work in previous years. Further, owing to the demands of the war on the services of medical men, the Laboratory has had to undertake a certain amount of additional microbiological work which under ordinary circumstances would have been performed by medical men attached to hospitals.

The supply of anti-typhoid vaccine for military purposes in New South Wales and Queensland was continued, and the output in this connection has reached an enormous amount, as, owing to the exigencies of the situation, excessive amounts of vaccine have had to be made to compensate for unavoidable wastage.

In August Dr. E. W. Ferguson, Assistant Microbiologist, was accepted for military purposes, and left with the Military Hospital to which he was attached with the rank of Captain.

In May Mr. George Grant, the second senior Laboratory Assistant, also left us on military services.

These depletions in the staff have had to be compensated by overtime work and by the curtailment of investigations of considerable importance. Nevertheless, as much investigational work has been carried on as the diminished staff could compass, as it is realised that the knowledge thus acquired is of the greatest value to the community as a whole.

With the occurrence of cases of cerebro-spinal fever at one of the Military camps, the Microbiological Branch assisted the military by the establishment of a small branch laboratory there for the purpose of dealing with cases of this disease, and with other microbiological material from the military forces. This laboratory rendered very efficient aid to the military authorities. It was finally withdrawn at the end of the year, when the outbreak of cerebro-spinal fever had ceased.

I have again much pleasure in thanking the whole staff for their whole-hearted devotion to duty during a period of great pressure. The clerical staff must also be congratulated on their able assistance, and on the highly satisfactory way in which they have lessened the labours of the scientific officers by being able to receive from dictation long reports containing highly complicated scientific terms.

Your obedient Servant,
J. BURTON CLELAND,
Principal Microbiologist.

STAFF

STAFF.

Principal Microbiologist: JOHN BURTON CLELAND, M.D., Ch.M. (Syd.), Cert. Lond. School of Trop. Med., Fellow Roy. Soc. Med., Fellow Incorp. Soc. M.O.H., Fellow of the Society of Tropical Medicine and Hygiene, &c.

Assistant Microbiologists: EUSTACE W. FERGUSON, M.B., Ch.M. (on Active Service); C. H. BURTON BRADLEY, M.B., Ch.M. (Syd.), D.P.H. (Lond.) (temporary).

Laboratory Assistants: Robert Grant (Senior Assistant), George Gordon Grant (on Active Service), Austin Burton Duffy, John Owen Sergeant, William Alexander Thomson.

Laboratory Attendants: Harry Aldrich Gotto, Neil Maxwell McDonald, Arthur James Williamson.

Clerical Staff: Florence Stuart Wearne, Clerk; Bessie Dobson-Prince, Typiste and Shorthand-writer; Florence Mary Black, Typiste and Shorthand-writer; Annie Vera Matters, Office Assistant; James Flynn, Messenger (on Active Service).

SYNOPSIS.

Page.

Letter of Presentation 192

Staff of the Microbiological Laboratory 193

PART I.

Statement of routine work performed by the Microbiological Laboratory during the year 1915. Microbiological examinations. Pathological examinations. Parasites. Medico-legal examinations. Examination of rats. Work of Branch Laboratory, Liverpool Military Camp. Cultures and materials prepared and issued. Vaccines prepared and issued. Lactic cultures issued. Miscellaneous issues 194

PART II.

REPORTS OF INVESTIGATIONAL WORK.

Division I.—Infective Diseases.

1. Researches on Plague (J. B. Cleland and E. W. Ferguson) 199
2. Typhoid Fever:—
   (*a*) Widal (Agglutination) Reactions (Burton Bradley) 201
   (*b*) Routine Examinations at Branch Laboratory at Liverpool 201
3. Diphtheria:—
   (*a*) Routine Examination of Swabbings (J. B. Cleland) 202
   (*b*) Swabbings from the Training Ship "Tingira" (J. B. Cleland) 204
   (*c*) Pure Cultures Isolated and Tested (J. B. Cleland) 205
4. Tuberculosis:—
   (*a*) Examination of Sputa for Tubercle Bacilli (J. B. Cleland and Burton Bradley) 208
   (*b*) Examination of Urine for Tubercle Bacilli (J. B. Cleland) 210
   (*c*) Examination of Butter and Milk for Tubercle Bacilli (J. B. Cleland) 210
5. Leprosy (J. B. Cleland) 210
6. Meningitis (J. B. Cleland) 212
7. Syphilis—Results of the Wasserman Reactions for 1915 (E. W. Ferguson) 215
8. Vaccines (J. B. Cleland) 216

Division II.—Pathological Tissues.

9. Sections of Tissues for Microscopical Examination (Vermiform Appendix—Tissues passed *per urethram* and *per rectum*—Tissues from uterus and adnexa) (J. B. Cleland) 231

Division IV.—Parasites.

10. Hydatids (Echinococci) (J. B. Cleland) 251
11. Bilharziasis (J. B. Cleland) 251
12. A Young Slug Coughed up (J. B. Cleland) 251
13. Notes on Insects (E. W. Ferguson) 251
14. Acarina (E. W. Ferguson) 253
15. The Hæmatozoa of Australian Reptiles (J. B. Cleland) 253

Division V.—General.

16. Contributions to the History of Diseases in Man in Australia (J. B. Cleland):—
   (*a*) Hydatid Disease 258
   (*b*) Injuries and Diseases of Man in Australia attributable to Animals, except those due to Snakes and Insects 266
   (*c*) Diseases of the Skin 276
   (*d*) Scurvy 278

PART I.—ROUTINE WORK.

STATEMENT CONCERNING ROUTINE WORK.

Department of Public Health—			
Microbiological Laboratory	3,304		
Coast Hospital	805		
Liverpool State Hospital	22		
Newington ,, ,,	20		
Rookwood ,, ,,	829		
		4,980	
Commonwealth Government		1,063	
Department of Agriculture		5	
,, Fisheries		19	
,, Police		101	
,, Prisons		278	
,, Public Instruction		2	
,, Railways		20	
,, State Children's Relief		6	
,, Stock		12	
,, Stores Supply		3	
Public Hospitals and Institutions		1,556	
Sydney Harbour Trust		2	
Zoological Gardens		2	
Commonwealth Government, Department of Defence, Branch Laboratory at Liverpool Camp		659	
		8,713	1914. 10,503
Examination of rats for Plague—			
Department of Public Health	2,358		
City Council of Sydney	5,111		
Sydney Harbour Trust	884		
Other sources (chiefly Federal Quar. Dept.)	1,320		
		9,673	9,439
Total		18,386	19,942

Routine Work.

The number of examinations (18,386) made during 1915 is less than that of 1914 (19,942).

The difference is due chiefly to the falling off in examinations made for the Commonwealth Government, which numbered 3,760 in 1914 as compared with 1,068 in 1915. The large number in 1914 was accounted for by the outbreaks of diphtheria on the "Tingira" and at the Military Training College. Thus there was a total of 5,246 diphtheria specimens in 1914 and only 2,495 in 1915.

A.—Microbiological Examinations.

1. Of material from diseased persons and animals :—

Acne	18	Mastitis (bovine)	17
Actinomycosis	3	Meningitis	133
Anæmia	2	Plague	1
Anthrax	5	Pneumonia	14
Bilharziasis	2	Pyorrhœa alveolaris	7
Bronchiectasis	10	Pyæmia	1
Bronchitis (Chronic)	2	Puerperal Septicæmia	4
Carbuncle	2	Septicæmia	16
Cholera	1	Septic conditions	119
Cystitis and Pyelitis	105	Synovitis	1
Diphtheria	2,495	Syphilis	661
Empyema	8	Tetanus	3
Food Poisoning	1	Tuberculosis	1,896
Furunculosis	34	,, (Bovine)	1
Gonorrhœa	306	Typhoid	868
Hydatids	27	Unclassified	10
Impetigo	1		
Leprosy	11	Total	6,873
Malaria	88		

The number of examinations under this heading in 1914 was 8,865. This decrease of nearly 2,000 examinations is chiefly due to the relative absence of cases of diphtheria in the State, the swabs examined for this disease in 1914 being 5,246, and in 1915 only 2,495. The number of specimens, chiefly of sputa, examined for the tubercle bacillus has increased from 1,670 to 1,896, and those for typhoid fever from 614 to 868, whilst the number of examinations for syphilis has remained nearly constant.

Actinomycosis.—Of three specimens examined, only one showed the presence of actinomycosis. This case was a human one, the liver being affected. It will be described in detail later.

Anthrax.—Specimens from five cases of suspected anthrax were submitted. One came from a human being ; two from equines ; one from a sheep and one from a pig. In none of these cases was the anthrax bacillus detected. In three of them, guinea-pig inoculations from the original material were made without effect ; in the other two they were not made, the cultures being distinctly negative.

Cholera.—The specimen of fæces submitted for examination for the vibrio of cholera proved negative. It was a case from Kurri Kurri Hospital which clinically showed symptoms resembling those of Asiatic cholera. The examination revealed the presence of coliform bacilli belonging to *B. neapolitanis, B. coscoroba,* and B. Morgan's No. 1.

Malaria.

Malaria.—Blood slides from 71 cases of suspected malaria were examined in the laboratory during the year. Of these, 57 were negative and 14 positive. Most of the positive cases were due to the æstivo-autumnal parasite, and crescents themselves were detected in 6. Several of the other infections were tertian in type. Most of the cases contracted the disease in New Guinea or the Solomon Islands. Many of the negative cases were also probably malarial, but the blood film being made at unsuitable periods, the parasites were not detected. Of 31 cases examined at the branch laboratory at Liverpool, 22 were negative, and 9 positive.

Plague.—This case was negative. The patient showed an enlarged gland in the groin.

Tetanus.—Three specimens were submitted for the detection of *Bacillus tetani* in cases showing symptoms of tetanus. In none of the three cases was the organism detected. In one of the cases tetanus followed a self-induced abortion by means of a crotchet needle; seven days afterwards the symptoms of tetanus developed, and the patient was curetted. Some of the retained decidua was submitted. Smears and cultures did not show the presence of the tetanus bacillus, and inoculation into a guinea-pig was without any result.

2. Of Dairy Products:—

Milk	4

3. Of Materials:—

Antisera Preparations	7	Filters	2
Bread and Flour	2	Fish	1
Brewer's Grains	2	Fruit (Preserved Pears)	1
Calf Lymph	1	Garbage	1
Catgut (Van Horn's chromicised)	1	Margarine	1
Cooked Meats:		Milk Culture	1
Tinned Corned Beef	1	Milk (six tins)	1
,, Rabbit	1	Oysters (parcels)	8
Pig's Jaw	1	Soap	1
Crayfish	2	Vaccines, Serums, Anti-toxins, &c.	22
Cultures (Manufacture of Margarine)	1	Water	3
Disinfectants	8		74
Effluent from Septic Tank	3		
Eggs (parcels)	2		

B.—Pathological Examinations.

Of Animals:—

Birds	3	Mammals	1
Fish	1		5

Of Body Fluids, Tissues, &c.:—

Bile	1	Tissues:	
Blood (Differential Count, &c.)	21	Human	34
Calculi	5	Animal	20
Fæces	10	Tumours:	
Gallstones	1	Malignant	86
Stomach Extract	1	Non-malignant	168
Stomach Contents	1	Indefinite	28
		Urine	173
			549

C.—Examination of Parasites.

Ecto-parasites (Fleas, Ticks, &c.)	494
Endo-parasites (Round and Flat Worms, &c.)	5
	499

D.—Medico-Legal Examinations.

Examination of Exhibits for:—

Bacteria	1	Cause of Death	1
Blood Stains	12		64
Seminal Stains	27		
Spermatozoa	23		

E.—Examination of Rats.

For Department of Public Health	2,358	Other Sources	1,320
,, City Council	5,111		9,673
,, Sydney Harbour Trust	884		

F.—Work Carried out for the Commonwealth Department of Defence at a Branch Laboratory at Liverpool.

(Details dealt with separately from those of the Main Laboratory in the body of this Report.)

Acne	1	Typhoid	32	
Bronchitis	1	Unclassified	3	
Cerebro-spinal Meningitis	374			609
Diphtheria	49	Blood (Differential Count, &c.)	7	
Furunculosis	2	Urine	42	
Gonorrhœa	23			49
Malaria	34	Water	1	
Pneumonia	11			1
Septicæmia	1			
Septic Conditions	6			659
Tuberculosis	81			

1. Culture Media Prepared.

Agar: Bile Salt	tubes	310
,, Glucose	,,	770
,, Glycerine veal	,,	591
,, Nutrient	,,	32,883
Blood Serum	,,	18,679
Dorset's Egg Media	,,	172
Gelatine	,,	446
Litmus peptone water—		
Adonite	,,	600
Amygdaline	,,	600
Arabinose	,,	600
Dextrine	,,	550
Dulcite	,,	2,929
Erythrite	,,	600
Galactose	,,	600
		60,330

Brought forward ...		60,330
Litmus peptone water—*continued.*		
Glucose	tubes	3,073
Glycerine	,,	440
Inulin	,,	600
Lactose	,,	3,240
Maltose	,,	600
Mannite	,,	2,929
Raffinose	,,	600
Saccharose	,,	2,929
Salicin	,,	600
Sorbite	,,	600
Milk: Litmus	,,	1,861
,, Ordinary	,,	4,148
Nutrient Broth	,,	3,412
Peptone water	,,	1,969
Total		87,331

2. Culture Media issued.

To whom issued.	Description.	Quantity.
Armidale Hospital	Blood serum	18
Commonwealth Government—		
Garrison Hospital, Victoria Barracks	Broth swabs	12
No. 3, General Hospital, A.I.F.	Agar	60
	Blood serum	36
Garden Island	Agar	12
P.M.O., Rabaul	Bile salt agar	24
Department of Public Instruction	Blood serum	120
	Agar	6
Dubbo Hospital	Broth	2
	Blood serum	12
Gladesville Hospital for the Insane	,,	12
Lewisham Hospital	,,	72
Liverpool State Hospital	,,	6
Marrickville Cottage Hospital	Broth	3
Mater Misericordiæ Hospital	,,	5
Medical Practitioners	Agar	69
	Blood serum	119
	Bile salt agar	6
	Broth	33
Orange Hospital	,,	1
Portland Hospital	Blood serum	24
Tamworth Hospital	Agar	3
	Blood serum	2
	Broth	4
Wagga Hospital	Blood serum	96
Wellington Hospital	,,	36
Western Suburbs Cottage Hospital	Broth	1
Wyalong Hospital	Blood serum	84
Women's Hospital, Crown-street	Agar	12
	Blood serum	12
Total		902

3. Bacteriological Materials issued.

To whom issued.	Description.	Total.
Balmain Hospital	Swabbings	234
	Widal pipettes	24
Bathurst Hospital	Swabbings	156
Berrima Hospital	,,	48
	Widal pipettes	12
Burrangong Hospital, Young	,,	30
Bush Nursing Association of N.S.W.	,,	12
Cessnock Hospital	,,	24
Christy & Co., Messrs.	Antivenin (Tiger snake)	30 c.c.
Coast Hospital	Centrifuge tubes	6
	Neisser's stain, A. & B.	2 oz.
	Chrysoidin	1 oz.
Cobar Hospital	Swabbings	24
Commonwealth Government—		
Federal Capital	Swabbings	18
	Wooden cases	18
H.M.A.S. "Tingira"	Swabbings	336
Captain Vickery, A.A.M.C.	Test tubes with corks	12
No. 3 General Hospital, A.I.F.	Swabbings	36
	Test tubes	36
	Litmus books	2
	Grease pencil	1
Naval College, Jervis Bay	Swabbings	42

3. Bacteriological Materials issued—*continued.*

To whom issued.	Description.	Total.
Commonwealth Government—*contd.*—		
Federal Quarantine Department	Swabbings	312
	Microslides	50
Garden Island	Swabbings	12
	Test tubes	12
Victoria Barracks	Swabbings	48
Field Hospital, Liverpool	,,	12
	Microslides	36
German Concentration Camp	Carbol fuchsin	60 c.c.
	Carbol gentian violet	30 ,,
	Gram's iodine	60 ,,
	Læffler's methylene blue	60 ,,
	Saturated sol. methylene blue	60 ,,
	25 % sulphuric acid	200 ,,
	Wright's stain	30 ,,
	Widal pipettes	12 ,,
Convalescent Home, Vaucluse	Swabbings	6
Department of Public Instruction	,,	120
	Gelatine plates	6
	Lymph pipettes	48
Department of Railways	Swabbings	12
Department of Health, Perth	Pure glucose	1 oz.
Department of Stock	Guinea pigs	7
Dubbo Hospital	Swabbings	24
	Widal pipettes	12
Lady Edeline Hospital for Babies, Vaucluse	Microslides	12
	Test tubes	12
	Test tube stand	1
	Litmus books	2
Junee Hospital	Swabbings	60
Liverpool State Hospital	Widal pipettes	12
	Swabbings	6
Medical Officer of Health, Newcastle	Spirit	1 gal.
	Mead's adhesive tape	24 spools
	Lint	4,000 squares
Medical Practitioners	Paradimethylbenzaldehyde	4 oz.
	Swabbings	245
	Widal pipettes	54
	Neutral red	5 grms.
Parramatta Hospital	Widal pipettes	12
Portland Hospital	Swabbings	12
Queanbeyan Hospital	,,	62
	Widal pipettes	24
Rookwood State Hospital, Lidcombe	Test tubes	84
	Swabbings	24
	Widal pipettes	24
Royal Alexandra Hospital	Guineapigs	20
Royal Prince Alfred Hospital	,,	6
Sydney Hospital	,,	37
	Rabbits	2
	Hæmatoxylin sol., 10 %	1 oz.
Sydney Medical Mission	Swabbings	396
Smith, Mr. Colin, Glenbrook	Sodium taurocholate	100 grms.
Tweed Hospital	Widal pipettes	12
Wallsend Hospital	,,	24
Wellington Hospital	,,	12
	Swabbings	24
Windsor Hospital	,,	12
Women's Hospital	,,	12

4. Vaccines Prepared and Issued.

Acne (stock)	2	Mixed Forward	492
Anti-cholera	2	Coliform and *S. aureus*	1
Anti-meningococcal	2	,, ,, Streptococci	1
Anti-typhoid vaccine (161,115 c.c.)	199	,, ,, *B. proteus*	2
B. proteus	4	*B. proteus* and Gram pos. cocci	1
B. pyocyaneus	1	Diplococci and Streptococci	2
Coliform	79	Coccal and Streptococcal	1
Coccal	10	,, ,, Diphtheroids	2
Diphtheria	4	Diplococci and coliform bacilli	1
Diphtheroid	5	,, ,, cocci	1
Diploccoccal	4	Coliform and Gr. pos. cocci	1
Fluorescent bacilli	3	Various	5
Gram negative cocci	1	Pneumococci and Gr. neg. cocci	1
,, bacilli	1	*S. albus* and diphtheroid	1
,, cocco-bacilli	1	*S. aureus* and *albus*	3
Gram positive cocci	1	,, ,, *albus* and diphtheroids	1
M. catarrhalis	2	,, and pneumococci	1
Morgan's No. 1	1	,, ,, *albus* and streptococci	1
Pneumococcal	3	,, and *B. proteus*	1
Staphylococcal	1	,, and diphtheroids	1
S. albus	25	Streptococci and Gr. pos. bacilli	1
S. aureus	84	,, and *B. proteus*	1
,, (stock)	1	,, and diplococci	1
Streptococcal	48		
Streptococcus of Bovine Mastitis	8	Total	523

5. Lactic Bacteria (Butter starters, &c.) Issued.

To whom issued.	Quantity.
Bean, Dr.	4 bottles.
Berry Stud Farm	4 ,,
Black, Mr., Mogg's Swamp	5 ,,
Burgess, Dr., Wagga	1 bottle.
Cameron, —, Llangothlin	8 bottles.
Clubbe, Dr.	3 ,,
Colman, H., Guyra	8 ,,
Coast Hospital	134 ,,
Cook, Professor	116 ,,
Gallagher, R., Guyra	13 ,,
Gillies, Dr. S.	15 ,,
Handebo, T. C., Llangothlin	13 ,,
Johnstone, R., Llangothlin	9 ,,
Kennedy, T., Braidwood	5 ,,
King, H. S. Llangothlin	3 ,,
Littlemore, Rev., Strathfield	37 ,,
Mayo, Dr. Helen	1 bottle.
McConnell, Miss, Bathurst	1 ,,
Moore, Giles, Guyra	18 bottles.
Pryor, E. A., Tubbamurra	3 ,,
Smith, Dr. G. K.	1 bottle.
Spendely, Mr. H., Epping	33 bottles.
Steel, T.	2 ,,
Stevenson, Mr., Guyra	5 ,,
Sydney Hospital	2 tubes.

6. Other Cultures and Sera Issued.

To whom issued.	Description.
Adelaide Hospital	Cultures of *B. Ærtryck; B. Gaertner; B. typhosus*, Nos. 1, 2, B, 6, 7, 8; *B. paratyphosus* B.; Anti-Gaertner, and Anti-Paratyphosus B. sera.
Bradley, Dr. Burton	,, ,, *B. coli* Esch., L.I.; *B. prodigiosus; B. typhosus;* and Meningococcus.
Chief Health Officer, Port Darwin	,, ,, *B. typhosus*, I.P. and L.I.P.M.
Commonwealth Government—	
No. 3 General Hospital	,, ,, *B. typhosus*, L.I.P.M., and B.
French Cruiser, "Kersaint"	,, ,, *B. typhosus*, L.I.P.M., and I.P.
Johnson, Dr. Angus	,, ,, Anti-human and Anti-sheep sera.
Otago University (Professor Champtaloup)	,, ,, *M. melitensis; B. Ærtryck; B. prodigiosus.*
Royal Alexandra Hospital for Children.	,, ,, *B. typhosus*, Nos. 1, 5, 8, and 9.
Sydney Hospital	,, ,, *paratyphosus* A and B.
Sydney University	,, ,, ,, A and B.
Tidswell, Dr. F.	,, ,, *B. prodigiosus*, and Streptococci var.
Waterfall Sanitorium	,, ,, *B. pyocyaneus.*

PART II.—REPORTS OF INVESTIGATIONAL WORK.

Division I.—Infectious Diseases of Animals (including Man).

1. RESEARCHES ON PLAGUE.

(J. B. Cleland and E. W. Ferguson.)

In connection with routine measures taken for the detection of the presence of plague and the prevention of its spread, 9,673 rats and mice were examined during 1915. Plague was not found in any of the specimens, thus leaving a plague-free period from April, 1910.

Ecto-parasites collected from Rodents.

Week ended—	No. of Rats and Mice examined.	No. infected with plague.	Insecta.										
			Diptera Siphonaptera (Fleas.)						Hemiptera.	Coleoptera (Beetles.)			
			Læmopsylla cheopis.	Ctenopsylla musculi.	Ceratophyllus fasciatus.	Ctenocephalus canis and felis.	Pulex irritans.	Total Fleas.	Cimex, &c. (Bugs.)	Cucujidæ.	Gamasidæ.	Very small Acarids (Mites).	Ixodidæ
1915.													
9 Jan.	186	...	63	1	6	...	...	70	...	2	1	...	...
16 Jan.	283	...	25	3	1	...	...	29	...	...	...	...	1
23 Jan.	255	...	...	...	...	...	...	...	...	...	...	...	...
30 Jan.	203	...	...	...	...	...	...	...	...	...	...	...	...
6 Feb.	234	...	8	1	1	...	...	10	...	...	...	1	...
13 Feb.	300	...	...	...	...	...	...	...	...	...	...	...	...
20 Feb.	161	...	...	...	...	...	...	...	...	...	...	...	...
27 Feb.	203	...	...	...	...	...	...	...	...	...	...	...	...
6 Mar.	202	...	...	...	...	..	...	...	...	...	...	...	...
13 Mar.	173	...	77	7	5	3	...	92	1	3	...	1	...
20 Mar.	206	...	...	...	...	...	...	...	...	...	...	...	...
27 Mar.	212	...	...	...	...	...	...	...	...	...	...	...	...
3 April	176	...	...	...	...	...	...	...	...	...	...	...	...
10 April	139	...	...	...	...	...	...	...	...	...	...	...	...
17 April	178	...	...	...	...	...	...	...	...	...	...	...	...
24 April	178	...	...	...	...	...	...	...	...	...	...	...	...
1 May	233	...	14	26	2	...	...	42	...	...	...	...	...
8 May	178	...	...	...	...	...	...	...	...	...	...	...	...
15 May	281	...	1	...	...	...	...	1	...	...	...	...	...
22 May	222	...	...	...	...	...	...	...	...	...	...	...	...
29 May	170	...	...	6	...	...	...	6	...	...	...	...	...
5 June	201	...	...	...	...	...	...	...	...	...	...	...	...
12 June	130	...	18	8	...	...	...	26	...	...	...	...	...
19 June	151	...	...	...	...	...	...	...	...	...	...	...	...
28 June	136	...	...	...	...	...	...	...	...	...	...	...	...
3 July	152	...	...	...	...	...	...	...	...	...	...	...	...
10 July	149	...	1	...	...	...	...	1	...	...	...	...	...
17 July	174	...	...	...	...	...	...	...	...	...	...	...	...
24 July	195	...	6	14	1	...	...	21	...	...	...	...	...
31 July	152	...	6	19	2	1	...	28	...	...	...	...	..
7 August	172	...	12	19	...	...	...	31	...	...	...	...	...
14 August	169	...	3	8	3	...	...	14	...	...	...	...	...
21 August	174	...	...	...	...	...	...	...	...	...	...	...	...
28 August	187	...	...	...	...	...	...	...	...	...	...	...	...
4 September	170	...	...	...	...	...	...	...	...	...	...	...	...
11 September	131	...	5	27	12	...	...	44	...	...	...	...	...
18 September	160	...	...	...	...	...	...	...	...	...	...	...	...
25 September	173	...	...	...	...	...	...	...	...	...	...	...	...
2 October	123	...	...	...	...	...	...	...	...	...	...	...	...
9 October	71	...	...	...	...	...	...	...	...	...	...	...	...
16 October	323	...	...	...	...	...	...	...	...	...	...	...	...
23 October	260	...	5	6	23	...	...	34	...	...	...	...	...
30 October	223	...	...	...	...	...	...	...	...	...	...	...	...
6 November	159	...	...	...	...	...	...	...	...	...	...	...	...
13 November	278	...	...	...	...	...	...	...	...	...	...	...	...
20 November	150	...	...	...	...	...	...	...	...	...	...	...	...
27 November	189	...	5	...	6	...	...	11	...	...	...	...	...
4 December	127	...	...	3	...	...	...	3	...	...	...	...	...
11 December	176	...	1	4	...	...	...	5	...	...	...	...	...
18 December	246	...	1	3	8	...	...	12	...	...	...	...	...
25 December	155	...	...	..	2	...	...	2	1	...	...	...	...
31 December	64	...	1	1	...	...	...	2	...	...	...	...	...
Year	9,673	...	252	156	72	4	...	483	2	5	1	2	1

Species of Fleas.

The fleas collected were determined as belonging to four species--*Xenopsylla* (*Læmopsylla*) *cheopis*, *Ctenopsylla musculi*, *Ceratophyllus fasciatus*, *Ctenocephalus felis* (or *canis*.)

Number and Seasonal Prevalence of Fleas.

In the following statement the figures referring to the three principal species of rat-fleas collected each month are given in gross, and also expressed as a ratio per 1,000 rats examined. The same data have also been plotted upon the accompanying chart.

Months.	Cases in human beings.	No. of rodents examined.	No. infected with plague.	Læmopsylla cheopis.		Ctenopsylla musculi.		Ceratophyllus fasciatus.	
				Gross.	per 1,000 rats.	Gross.	per 1,000 rats.	Gross.	per 1,000 rats.
1915.									
January ...	.....	907	.....	88	97·02	4	4·41	7	7·71
February ..	.....	898	.....	8	8·91	1	1·11	1	1·11
March	.....	949	.....	77	81·13	7	7·37	5	5·26
April	.....	729	.....	14	19·21	26	35·66	2	2·74
May	.....	917	.....	1	1·2	6	6·54	.....	.....
June	.....	649	.....	18	27·73	8	12·32	.....	.....
July	.....	744	.....	13	17·47	33	44·35	3	4·03
August	.....	768	.....	15	19·53	27	35·15	3	3·91
September ...	.....	661	.....	5	7·56	27	40·84	12	18·15
October... ...	.....	907	.....	5	5·51	6	6·61	23	25·35
November ...	.....	835	.....	5	5·98	.....	.....	6	7·11
December ...	.....	709	.....	3	4·23	11	15·51	10	14·11

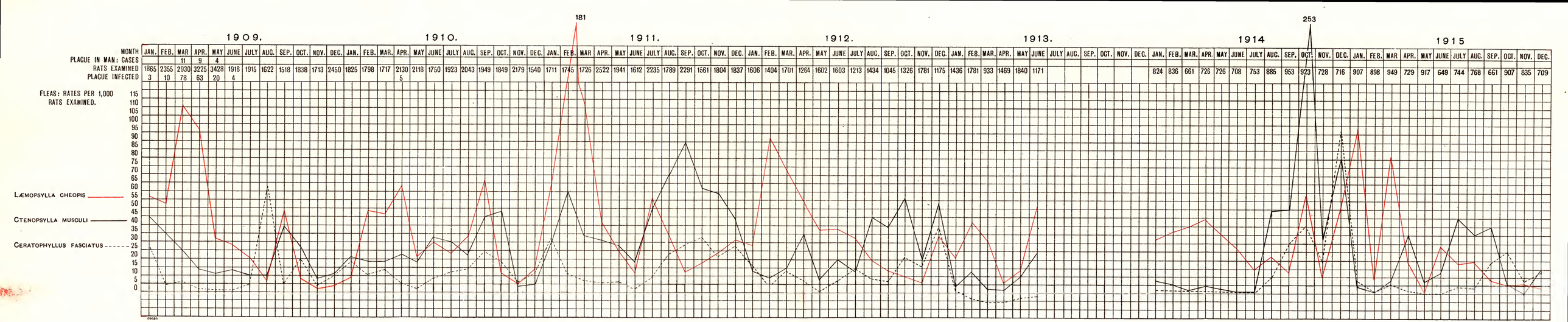
Examination of Rats.

"All the rats received belonged to one of two species—*Mus decumanus* and *Mus rattus*. No record was kept of the actual number of each. In the whole collection there were about as many of one as of the other; but *Mus rattus* predominated among those taken along the shores, and *Mus decumanus* among those taken inland. The infected specimens were all *Mus decumanus*." (Report of a Second Outbreak of Plague at Sydney, 1902, p. 65; the statement refers to all rats examined from 1900 to 1902.) The subsequent results are given in the table which follows :—

Year.	Period of Rat Examination.	Rats examined.				Mice examined.			Infected.							Percentage of infected to total examined.		
		Decumanus.	Per cent.	Rattus.	Per cent.	Musculus.	Per cent.	Total.	Decumanus.	Per cent.	Rattus.	Per cent.	Musculus.	Per cent.	Total.	D.	R	M
1903	1st May to 15th Aug.	rats. 8,695	...	...	...	5,976	...	14,671	'rats.' 111	...	...	...	'mice.' 50	...	161	...	...	...
1904	1st Mar. to 3rd Dec.	12,169	27·76	8,225	18·76	23,428	53·48	43,822	108	44·26	73	29·92	62	25·41	243	·76	1·16	0·26
1905	Year.	11,383	53·72	5,681	17·81	14,831	46·47	31,895	78	55·32	45	31·91	18	12·77	141	·79	·88	·13
1906	„	9,275	31·49	8,694	29·52	11,478	38·97	29,447	46	26·44	89	51·15	39	22·41	174	·49	1·02	·34
1907	„	8,628	27·2	10,479	33·9	12,244	38·7	31,621	57	26·03	143	65·29	19	8·68	219	·66	1·3	·15
1908	„	7,622	28·39	9,207	34·29	10,020	37·32	26,849	82	46·86	78	44·57	15	8·57	175	1·075	·84	·14
1909	„	6,752	25·26	11,259	42·08	8,726	32·66	26,737	22	12·36	138	77·53	18	10·11	178	·32	1·22	2·06
1910	„	5,708	24·98	10,076	44·15	7,044	30·87	22,821	4	80·	1	20·	...	...	5	·07	·009	...
1911	„	6,025	26·45	10,830	47·55	5,919	26·	22,774	...	...	...	...	...	...	...	...	...	...
1912	„	6,510	37·82	7,922	46·18	2,722	16·	17,154	...	...	...	...	...	...	...	...	...	...
*1913	„	5,020	47·29	5,477	51·59	118	1·1	10,615	...	..	...	...	...	...	...	...	...	...
1914	„	3,732	39·53	5,487	58·14	220	2·33	9,439	...	...	...	...	...	...	...	...	...	...
1915	„	3,592	37·13	5,946	61·48	135	1·39	9,673	...	...	...	...	...	...	...	...	...	...
Total	.....	86,409	30·55	99,553	35·19	96,885	34·26	282,847	397	34·98	567	49·96	171	15·06	1,135	·64	0·88	·19

*Examination of rodents was suspended during the months of August, September, and October owing to the smallpox outbreak.

LIBRARY
OF THE
UNIVERSITY OF ILLINOIS



LINES NOT COMPLETED FOR THE SECOND HALF-YEAR, 1913.

EXAMINATION OF RATS WAS SUSPENDED FROM JULY TO DECEMBER, 1913, OWING TO THE SMALLPOX OUTBREAK.

2. TYPHOID FEVER.

(*a*) (Widal Agglutination) Reactions.

(Burton Bradley.)

Blood from 750 cases were examined for the Widal reaction during 1915. Of these, 715 cases were examined only once, thirty-three were examined on two occasions, and two on three occasions.

Cases examined once only.

Of the 715 cases examined once only :—

Positive reactions	179
Negative ,, ...	473
Incomplete ,, ...	63

which gives a positive percentage of 25.

The following table has been constructed showing the monthly numbers of these cases examined once, the number positive, negative or incomplete, and the percentage positive each month.

Table I.

Cases examined once only.

Month.	No. Examined.	Positive.	Negative.	Incomplete.	Percentage Positive.
January	76	32	34	10	42
February	106	24	72	10	23
March	50	5	39	6	10
April	63	25	29	9	40
May	60	17	38	5	28
June	54	13	36	5	24
July	31	6	25	–	19
August	34	3	31	–	9
September	32	7	24	1	22
October	44	5	37	2	11
November	80	16	55	9	20
December	85	26	53	6	30

Cases examined more than once.

Thirty-five cases were examined more than once—

Of these, 33 cases were examined twice.

2 ,, ,, thrice.

Cases giving the same result on each examination—

Negative	15 (two examined three times).
Incomplete	3
Total ...	18

Cases giving a different result on two examinations—

Negative followed by incomplete	4
,, ,, positive	5
Incomplete followed by negative	4
,, ,, positive	4
Total	17

The same results as well as the results for 1914 are displayed in curves, showing the number of Widal cases monthly, and the number of positive cases monthly, and compared with the curve of cases of typhoid fever reported fortnightly in New South Wales.

The general correspondence of the curves is marked but is, as would be expected, by no means exact, as various circumstances quite unconnected with typhoid fever materially alter the total number of Widals performed.

The summer rise in all curves is marked.

(*b*) Routine Examinations at the Branch Laboratory at Liverpool.

Of 20 Widal reactions performed, 5 were positive, 1 partial and 14 negative. *B. typhosus* was isolated from one out of seven urines examined. It was also apparently present but not completely identified in one out of two samples of fæces. It was obtained in two out of three blood cultures made. In one case a positive Widal reaction was obtained, and *B. typhosus* was isolated from the blood and urine and was also apparently present in the fæces.

3. DIPHTHERIA.

3. DIPHTHERIA.

(*a*) Routine Examinations of Swabbings.

(J. B. Cleland.)

During the year 1915, 1,774 swabbings (being three less than in the previous year) were examined in ordinary routine for the presence of diphtheria bacilli. In addition, 629 swabs were received from boys on the training ship "Tingira," which are dealt with separately.

The 1,774 swabs were received from general practitioners in the neighbourhood of Sydney and in the country, from the smaller hospitals, more especially country ones, and occasionally for diagnostic purposes from small institutions, soldiers in camp, &c.

The same procedure in their examination was carried out in 1915 as in previous years, the cultures being examined at the end of twenty-four hours, and, if negative then, again at the end of forty-eight hours. The staining method adopted was that of Neisser, chrysoidin modification.

As in previous years, the positive results have been again divided into positives after twenty-four hours' incubation and positives after forty-eight hours' incubation. Though in most cases a culture of forty-eight hours' incubation has been examined twice, in some instances, as, for example, in swabs arriving at the week-end, the cultures have only been examined once at the end of forty-eight hours' incubation. Therefore the positive results under the forty-eight hour division are again divided into those positive after one examination and those only positive after a second examination. As 375 swabs were positive after only twenty-four hours' incubation, and 143 were negative after twenty-four hours' incubation, but positive after forty-eight hours' incubation, the value attached to the re-examination of a negative swab after further incubation is again well illustrated, as it has been in previous reports. A review of the total positive results for each month shows that the smallest numbers were detected in July and October (19 in each). In August there were 33; November, 34; April, 44; and December, 47. The highest numbers were received in January, February, March, and June.

The year was one in which diphtheria was not definitely epidemic, and it is therefore rather interesting to note that the three first months of the year, which are summer months, supplied three of the four highest readings of total positive results. Table I shows in this respect a difference from our usual result of an increase in positive swabbings during the winter months, possibly due to the fact that the disease was rather endemic than epidemic.

Table Ia shows the monthly percentage of positive swabbings to the total positives for the year, and illustrates the same incidence of the disease, if it be assumed that we received each month the same relative number of positive swabbings as there were cases of the disease amongst the community. In June, 1913, and in June, 1914, the highest number of positive swabbings to the total yearly positives occurred. June, 1915, however, was third on the list, precedence being taken by March and then January. In 1913, July was second, and in 1914, May. In 1913 there was a relative increase in January. A corresponding increase in December, 1914, was carried into the first three months of 1915.

Table Ib shows the percentage of positive swabbings to the total number of swabbings submitted for each month. This table is probably of much less value than the preceding one, inasmuch as the results may be considerably upset by the submission of a large number of swabbings from some particular source when a single case of diphtheria or of suspected diphtheria arises, as, according to circumstances, the number of negative swabbings thus submitted may vary from a few to a hundred. Such additions to the figures at once discountenance their value.

Table II gives a list of cases examined on more than one occasion. During the year several persistent "carriers" have again been under observation, which were in most cases originally instances of the disease diphtheria itself. Two of these, which were uncompleted at the end of the year, have been carried over to 1916. Four of the remaining cases were under observation from five to six weeks; another for 142 days, being positive on eleven occasions and negative on six; another for 175 days, being positive on twenty-one occasions and negative on five; and still another for 414 days, being positive on twelve occasions. In those cases marked with an asterisk diphtheria bacilli were isolated and tested.

In most of the cases in this table the negative results occurred towards the end of the period over which the examinations extended, but in some instances a negative result was obtained, followed by further positive ones. As a rule, however, when such a negative result followed by positive ones took place, the diphtheria bacilli in succeeding positive examinations were few in number and only found after forty-eight hours' incubation.

Amongst the cases from which pure cultures were isolated and tested, the following are of interest, inasmuch as the organisms were not toxic to guinea-pigs:—

Case 4.—A nurse at the Coast Hospital.

Case 5.—A patient from the Coast Hospital; and

Case 7.—A constable who was a patient for many weeks at the Coast Hospital.

Case 9 is interesting. A girl was under observation for 414 days, giving a number of positive results. Unfortunately, the organism was not isolated and tested until she had been under observation for over a year, when it was found to be non-toxic. As the patient had been definitely associated with cases of diphtheria, interesting speculation arises as to whether the organism which she carried was originally toxic or non-toxic.

Cases 8 and 10 illustrate well the long persistence of toxic diphtheria bacilli in "carrier" cases.

Table

TABLE I.—PRACTITIONERS' CASES.

Month.	Positive 24 hours.	Positive in 48 hours.		Total Positive.	Negative.	Suspicious.	Total.
		1st Exam.	2nd Exam.				
January	50	3	12	65	124	.....	189
February	43	5	12	60	88	1	149
March	47	7	21	75	120	3	198
April	33	3	8	44	105	1	150
May	32	8	13	53	90	1	144
June	45	2	15	62	88	...	150
July	13	.....	6	19	98	2	119
August	17	4	12	33	104	1	138
September	24	5	23	52	103	1	156
October	11	2	6	19	80	1	100
November	16	5	13	34	102	7	143
December	44	1	2	47	86	5	138
	375	45	143	563	1,188	23	1,774

TABLE IA.—MONTHLY percentage (of positive swabbings) of total positives for the year.

January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
11·54	10·65	13·32	7·81	9·41	11·01	3·37	5·86	9·23	3·37	6·03	8·34

TABLE IB.—PERCENTAGE of positive swabbings each month of total number submitted in each month.

January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
34·39	40·26	37·87	29·33	36·8	41·33	15·96	23·91	33·33	19	23·77	34·05

TABLE II.—TABULATED Results of repeated swabbings from individual patients.

Period over which patient was examined.	Number of times positive.	Number of times negative.	Total number of examinations.
Up to 1 week—			
2 days (4 cases)	.....	2	2
2 ,,	1 (suspicious)...	1	2
3 ,,	1	1	2
3 ,, (4 cases)	.....	2	2
4 ,,	2	...	2
4 ,,	1 (suspicious)... 1 (positive) ...	...	2
4 ,,	1 (atypical) ...	1	2
4 ,,	1	2	3
4 ,,	1	1	2
4 ,,	1 (suspicious)...	1	2
4 ,, (3 cases)	.....	2	2
5 ,, (3 ,,)	1	1	2
5 ,, (3 ,,)	.....	2	2
6 ,,	2	...	2
6 ,, (5 cases)	1	1	2
6 ,, (3 ,,)	.....	2	2
7 ,,	2	1	3
7 ,,	2	...	2
7 ,, (6 cases)	1	1	2
7 ,, (3 ,,)	.....	2	2
1 to 2 weeks—			
8 days	1	1	2
8 ,,	.....	2	2
9 ,, (6 exams.)	2	...	2
9 ,,	1 (positive) ... 1 (suspicious)...	...	2
9 ,,	1	2	3
9 ,, (6 cases)	1	1	2
10 ,, (2 ,,)	2	1	3
10 ,, (6 ,,)	1	1	2
11 ,,	2	1	3
11 ,,	2	...	2
11 ,,	1	2	3
11 ,, (2 cases)	1	1	2
11 ,,	1 (suspicious)...	2	3
11 ,, (2 cases)	.....	2	2
12 ,,	2	...	2
12 ,,	1	1	2
14 ,,	2	1	3
14 ,,	2	...	2
14 ,,	1	1	2
2 to 3 weeks—			
15 days (2 cases)	2	1	3
15 ,,	2	...	2
15 ,,	1	1	2
16 ,, (2 cases)	3	1	4
2 to 3 weeks—			
16 days (2 cases)	3	...	3
16 ,,	2	1	3
17 ,,	3	1	4
17 ,,	2	1	3
17 ,,	1	1	2
18 ,,	3	1	4
18 ,,	3	...	3
18 ,,	2	1	3
18 ,,	2	...	2
18 ,,	1	1	2
19 ,,	3	2	5
19 ,,	3	1	4
19 ,,	2	1	3
20 ,, (2 cases)	3	1	4
21 ,,	3	...	3
21 ,,	2	1	3
21 ,,	1	2	3
21 ,, (2 cases)	1	1	2
3 to 4 weeks—			
22 days	3	...	3
22 ,,	2 (positive) and 1 (suspicious)...	...	3
22 ,,	...	3	3
25 ,,	1	1	2
26 ,,	2	2	4
27 ,,	3	1	4
27 ,,	3	...	3
28 ,,	4	...	4
4 to 5 weeks—			
29 days	5	3	8
30 ,,	3	1	4
32 ,,	4	1	5
33 ,,	3	1	4
35 ,,	2	2	4
35 ,,	2	1	3
5 to 6 weeks—			
36 days	4	...	4
38 ,,	5	1	6
38 ,,	1	2	3
42 ,,	6	1	7
20 to 21 weeks—			
142 days*	11	6	17
24 to 25 weeks—			
175 days*	21	5	26
59 to 60 weeks—			
414 days*	8 (positive), 4 (nasal only)...	...	12

* Indicates that diphtheria bacilli were isolated and tested.

(*b*) Swabbings from the Training Ship "Tingira."

(J. B. Cleland.)

As mentioned in previous reports, from time to time on the training ship "Tingira" extensive outbreaks of diphtheria have occurred which have given rise to much trouble in suppressing them. During the year under review 629 swabs were received from this source, of which 75 were positive and 34 suspicious. Some of these swabbings were received from suspicious cases of disease amongst the boys; others from the associates of such cases; and still others from boys about to be enrolled, which were undertaken in the hope of thus detecting possible "carrier" cases before they reached the ship, and so preventing an outbreak of further cases on board. In cases from these sources it has become the practice to take not only swabbings from the throat, but also from both nostrils. Diptheroids from the nose are notoriously hard to diagnose morphologically, as many forms exist in this situation whch somewhat resemble the diphtheria bacilli. They are usually few in number and hard to isolate, and as isolation and testing under these circumstances are matters which take considerable time, recognition is in most cases based on the morphological detection only. It is therefore probable that in the results detailed in the table (Table III), a higher percentage of positive results is given than actually occurred. It has been considered better to err on the safe side, by considering suggestive organisms as probably diphtheria bacilli and of taking measures accordingly.

In the following instances cultures have been isolated and tested:—

1. "B," throat swabbings, 9th July. Numerous typical diphtheria bacilli were present in a culture in twenty-four hours made from the throat swabbing. Two of these were isolated and tested, giving acid on glucose and no reaction on saccharose up to five days.

2. "B," swabbing received on 10th July, no statement as to whether from the nose or throat. After forty-eight hours' incubation a few typical but small diphtheria bacilli were isolated. On plating, a diphtheroid was later isolated, which did not resemble the diphtheria bacillus, showing only a break in the centre and no granules. Two of these strains gave no reaction on glucose, lactose, saccharose or glycerine up to five days.

3. "C.M." Swabbing received on 12th July; no statement as to whether from the nose or throat. After twenty-four hours' incubation, fairly numerous typical bacilli were detected and later isolated. Two strains of these both gave acid on glucose and no reaction on lactose and saccharose; later acid developed in glycerine.

4. "A." Swabbing received on 14th September. After forty-eight hours' incubation, cultures from the throat and from the nose were both positive. From the nose typical diphtheria bacilli were isolated, three strains of which gave acid on glucose and no reaction on saccharose. When tested on two guinea-pigs in the usual way, one being protected with anti-toxin, both animals remained quite well. This patient had been isolated as a "carrier" case for over two months, but at no time had he shown any evidence of disease. Local and general treatment did not seem to have any useful effect on his condition.

5. "H." Swabbing received on 14th September. Typical diphtheria bacilli were present after twenty-four hours' incubation and were later isolated. One strain gave acid on glucose and no reaction on saccharose. Of two guinea-pigs inoculated in the usual way, the one unprotected with anti-toxin died within forty-eight hours, showing typical reactions, whilst the one protected with anti-toxin remained well. It is of special interest to note that this patient in May had shown symptoms of diphtheria and had remained a "carrier" case ever since, local and general treatment apparently not having any useful effect upon his condition.

Table III.—Swabbings from the Training Ship "Tingira."

Month, 1915.	Throat Swabs.			Nasal Swabs.		Negative Swabs.	Total.
	Positive in 24 hours.	Positive in 48 hours.	Suspicious.	Positive.	Suspicious.		
February	.....	.....	.....	.....	.....	9	9
March	1	.....	.....	.....	.....	.....	1
April	.....	.....	.....	.....	.....	2	2
May	2	2	.....	.....	.....	6	10
June	1	1	.....	.....	.....	9	11
July	9	8	19 (probably mostly negative).	4	2	358	400
August	3	5	3	6	.....	62	79
September	3	3	.....	4	.....	16	23
October	2	2	.....	6	1	13	24
November	3	4	1	6	6	42	62
December	.....	.....	.....	.....	2	3	5
Totals	24	25	23	26	11	520	629

(c) Pure Cultures Isolated and Tested.

(J. B. Cleland.)

In the following instances pure cultures of diphtheria bacilli or diphtheroids have been isolated and tested for their sugar reactions, and in many cases also for toxicity.

Cultures from Throats.

Case 1.—Isolated from a swab submitted for diagnostic purposes. Typical granular diphtheria bacilli were isolated, giving acid on glucose, no reaction saccharose. A guinea-pig inoculated fifteen days after receipt of the swabbing with 1 c.c. of a seventy-two hour broth culture died next day, a control guinea-pig protected with 1 c.c. of anti-toxin remaining well.

Case 2.—Nurse "B." In 1914 this patient had given positive cultures of diphtheria bacilli for three or four months. In March, 1915, she complained of sore throat, and a swabbing showed diphtheria bacilli almost in pure culture. Typical granular diphtheria bacilli were isolated, as well as a diphtheroid which stained irregularly, but was not markedly granular. Both these types gave acid on glucose and no reaction on saccharose or maltose. Seven days after receipt of the cultures, a guinea-pig was inoculated with 1 c.c. of a forty-eight hour broth culture of the typical granular diphtheria bacilli, and died within forty-eight hours, a control guinea-pig protected with 1 c.c. of anti-toxin remaining well. A fortnight after receipt of the culture the other less granular diphtheroid organism was similarly tested on guinea-pigs with the same result, the unprotected guinea-pig dying within forty-eight hours with a typical local exudate. Apparently both the organisms isolated were toxic diphtheria bacilli.

Case 3.—Typical long granular diphtheria bacilli were isolated from the throat. These gave acid on glucose and no reaction on lactose and saccharose. In five days there was no reaction on glycerine, but later acidity developed.

Case 4.—Nurse "J," Coast Hospital. Morphologically typical diphtheria bacilli were isolated, but these were perhaps less granular than usual. Three cultures gave acid on glucose and no reaction on saccharose. A guinea-pig inoculated eight days after receipt of the culture with 1 c.c. of a forty-eight hour broth culture remained quite well; a control guinea-pig protected with anti-toxin died at the end of five days from septic abortion.

Case 5.—"A.F." Girl, Coast Hospital. Serum cultures were submitted from the throat and nose. Diphtheria bacilli were not detected in the cultures from the nose. In those from the throat, a Gram positive diphtheroid was present. The bacilli were fairly long and irregularly stained, but not exactly banded. Typical granules were present, but not in all the bacilli. Two cultures tested gave acid on glucose and no reaction on lactose and saccharose. In neither was there any reaction in glycerine up to five days, but later one of the cultures developed acidity. Two guinea-pigs inoculated in the usual way from one culture both remained unaffected.

(This case was apparently a sister of "G.F.," No. 11.)

Case 6.—"W.J.E.," Male. Four strains of pure cultures of diphtheria bacilli were isolated from a throat swabbing. These all gave acid on glucose and no change on saccharose up to a week's incubation.

Case 7.—"A.W.," Male, Coast Hospital. The patient was a police constable, being in a ward at the Coast Hospital for eleven weeks as a persistent diphtheria carrier. A serum culture was received on 25th February. Diphtheria bacilli were not detected in this. On 8th March a throat swabbing was received. This on plating showed a number of typical large granular diphtheria bacilli. Tested on sugars three strains gave acid on glucose and maltose, and no reaction on saccharose. Eight days after receipt of the swab two guinea-pigs were inoculated in the usual way, one being protected with anti-toxin. Both remained quite well up to a week.

Case 8.—"R.B.," Female. This patient came from the Wyalong Hospital, and was reported as showing the presence of diphtheria bacilli on 5th January, 1915. Diphtheria bacilli were still detected up to 15th June, but further swabbings received on the 22nd and 29th June were both negative, after which she was discharged. She was thus under bacteriological examination for a period of 175 days, during this period being positive on twenty-one occasions and negative on five, the last two swabbings in June being negative. The following are details of these examinations:—

January	5—	Positive on arrival of culture.
,,	9—	Positive after forty-eight hours' incubation.
,,	14—	Positive on arrival.
,,	26—	Positive after twenty-four hours' incubation.
February	1—	Positive on arrival.
,,	6—	Positive after twenty-four hours' incubation.
,,	9—	,, ,,
,,	18—	,, ,,
,,	25—	,, ,,
March	2—	Positive on arrival.
,,	10—	Positive after twenty-four hours' incubation.
,,	16—	,, ,,

March

March 23—Positive after twenty-four hours' incubation. Pure cultures of typical bacilli were isolated and tested as detailed below.
,, 30—Positive after 48 hours' incubation.
April 6—The swabbing received had been made on a dry serum tube, with the result that it was negative after 48 hours' incubation.
,, 13—Was also negative after forty-eight hours' incubation.
,, 22—Positive after twenty-four hours' incubation.
,, 27—Positive after forty-eight hours' incubation. Pure cultures were again isolated and tested.
May 4—Positive after twenty-four hours' incubation.
,, 11— ,, ,,
,, 26—Positive after forty-eight hours' incubation, the bacilli being few in number.
June 3—Negative after forty-eight hours' incubation.
,, 8—Positive after forty-eight hours' incubation.
,, 10—Negative after forty-eight hours' incubation.
,, 15—A few bacilli found after twenty-four hours' incubation.
,, 22—Negative after forty-eight hours' incubation.
,, 29— ,, ,,

The cultures isolated on 23rd March were typical diphtheria bacilli. Three cultures tested gave acid on glucose and no reaction on saccharose or maltose up to six days. One of these cultures was tested for toxicity in the usual way on guinea-pigs, the unprotected guinea-pig dying in two days, while the one protected with anti-toxin was discharged quite well at the end of a week.

The pure cultures isolated on 27th April gave acid on glucose and no reaction on saccharose after seven days' incubation. Two guinea-pigs inoculated in the usual way showed the death of the unprotected one in twenty-four hours with typical lesions, whilst the one protected with anti-toxin remained well and was discharged a week later.

In this case, it will be noted that towards the end of the carrier stage the organisms present markedly diminished in number, as shown by positive results being only obtained after forty-eight hours' incubation, and by occasional negative results interspersed between the positive ones.

The Wyalong Hospital is situated in the country, over 300 miles from Sydney. The length of time taken in transit of the swabbings or cultures evidently does not in any way interfere with the bacteriological examinations.

Case 9.—"R.B.," Girl, Sydney. This case was under bacteriological examination for a period of 414 days. During this period she gave positive swabbings from the nose or throat on twelve occasions. The first swabbing was received on 6th May, 1914, on account of two members of the family having had diphtheria and one being still at the Coast Hospital. All the family had prophylactic doses of anti-toxin, but nevertheless developed nasal discharges and general malaise. This nasal swab on 6th May was positive after twenty-four hours' incubation. On the next day positive results from nasal swabbings were obtained from the mother and another sister.

Throat swabbings taken on 1st June from "R.B." were positive after twenty-four hours' incubation, whereas the sister, who was previously positive, and the brother were negative after forty-eight hours' incubation.

1914.
June 20—Nasal swab positive after twenty-four hours' incubation.
August 4— ,, ,, forty-eight ,, ,,
September 25—Throat swab positive after twenty-four hours' incubation.
November 30—Nasal swab positive after forty-eight hours' incubation.

1915.
February 19—Throat swab positive after twenty-four hours' incubation.
March 10— ,, ,,
,, 23— ,, ,,
April 13— ,, ,,
May 29—Swabbing positive after forty-eight hours' incubation. Pure cultures were isolated on this occasion and tested as detailed below.
June 23—Throat swabbing positive after twenty-four hours' incubation, containing a few bacilli. The organism previously isolated proving to be non-virulent, the patient was discharged from this date.

From the swabbing on 29th May, which presumably came from the throat, four somewhat different diphtheria-like bacilli were isolated as follows:—

1. Typical long diphtheria bacilli with granules; Gram positive.
2. A short barred diphtheroid; Gram positive.
3. Like No. 1, but with larger granules and moderately long; Gram positive.
4. A banded type, short: Gram positive.

All four cultures gave acid on glucose and no reaction on saccharose up to five days. Twelve days after receipt of the swabbing, guinea-pigs were inoculated with sub-cultures from No. 1, which were typical-looking diphtheria bacilli. Both the protected and unprotected animals remained well, and were discharged at the end of a week without having any local reaction. Twenty-four days after receipt of the swabbing,

guinea-pigs

guinea-pigs were similarly inoculated from No. 2, with similar results. Eight days later a guinea-pig was inoculated with 1 c.c. of a forty-eight hour culture in milk of strain No. 1. This animal remained perfectly well. On the same day an emulsion of a forty-eight hour serum-agar culture of the same strain was inoculated into another guinea-pig. Next day this animal was sick and showed slight local œdema, but recovered and was discharged well at the end of eight days. These two latter tests on guinea-pigs, in one of which milk was used as a medium for growth, and the other serum-agar, were carried out to see whether an alteration in the nature of the culture medium might tend to cause increased toxicity of the strain involved, which apparently had lost its virulence. The growth in milk, in which any toxin manufactured would be retained in the material injected, did not obviously increase any toxicity present. In the case of the serum-agar culture, toxicity, even if present, would probably not be manifested by injecting an emulsion of the surface growth into a guinea-pig as the toxin would have diffused into the medium.

It will be seen that this case was a member of a family in which clinical cases of diphtheria had occurred and had been removed to the Coast Hospital. The patient and others in the family had been protected by prophylactic doses of anti-toxin—nevertheless, they developed some nasal discharge and general malaise.

The patient over a period of 414 days showed on each examination, either by nasal or throat swabbings, the presence of morphologically typical diphtheria bacilli. Unfortunately, an attempt was not made to isolate and test the toxicity of these organisms until the patient had been a carrier for over a year. When so tested, however, though the sugar reactions were those of true diphtheria bacilli, the two cultures tested showed no definite evidence of toxicity. As this patient was definitely associated with cases of the disease, it must be considered highly likely that the organism present in her throat and originally been derived from a toxin-producing organism responsible for the incidence of the disease in her family. Presumably during the course of its lodgment in her naso-pharynx the toxicity disappeared. The alternative view of this would be that she had been infected by a non-toxic diphtheria bacillus which had had quite a different source to that responsible for the disease diphtheria in her relatives.

Case 10.—"D.W.," Boy. This case had been a patient in the Coast Hospital, and, after convalescence, returned home with directions to be kept in quarantine until swabbings showed the absence of diphtheria bacilli from the throat. The case was under observation after leaving the Coast Hospital for 142 days, and was found to give positive results on eleven occasions and negative on six. During the course of the patient's home quarantine the parents used the utmost endeavours to remove the diphtheria bacilli from the child's throat. Various sprays of formalin, &c., were adopted, but without any really marked beneficial result. Eventually the organisms began to diminish in numbers, as shown by positive results being obtained only after forty-eight hours' incubation, or by negative results being interspersed between positive ones.

June	29—Positive after twenty-four hours' incubation.
July	19— ,, ,,
August	3—Negative after forty-eight hours' incubation.
,,	28—Throat positive, but nose negative.
September	4—Throat positive, but nose negative. Pure cultures of typical toxic diphtheria bacilli were isolated from the throat as detailed below.
,,	18—Throat positive.
,,	25— ,,
,,	29—Positive after 24 hours' incubation.
October	9—Negative after forty-eight hours' incubation.
,,	14—A few typical bacilli found after twenty-four hours' incubation.
,,	23—Negative after forty-eight hours' incubation.
,,	27—Positive after twenty-four hours' incubation.
November	1—Negative after forty-eight hours' incubation.
,,	4—Positive after forty-eight hours' incubation.
,,	8— ,, ,,
,,	15—Negative after forty-eight hours' incubation.
,,	18— ,, ,,

A pure culture of the diphtheria bacilli isolated on 4th September gave acid on glucose and no reaction on saccharose up to five days. Guinea-pigs inoculated in the usual way showed the death of the unprotected one within two days with typical lesions, the protected animal remaining well and being discharged a week later.

Cultures from the Nose.

Case 11.—"G.F.," Male, Coast Hospital. Typical long granular diphtheria bacilli were isolated from a nasal swabbing received on 8th July. These gave acid on glucose, but no reaction on lactose, saccharose or glycerine after five days, though on the seventh day slight acidity developed in glycerine. A guinea-pig inoculated in the usual way died within three days with a typical local reaction, &c. A control guinea-pig protected with anti-toxin remained well.

On 25th October further swabbings were received from the nose and throat of this patient. Diphtheria bacilli were not detected in the throat. In cultures from the nose numerous granular, very suspicious bacilli were present. Three pure cultures were isolated

isolated which showed a barred diphtheroid not quite typical of diphtheria bacilli. Two cultures tested gave acid on glucose, but no reaction on mannite, dulcite, lactose or saccharose. Two guinea-pigs were inoculated in the usual way, and both the protected and unprotected animals remained perfectly well. Apparently in this case the typical toxic diphtheria bacillus had died out in the course of time, leaving, however, a barred, somewhat suspicious diphtheroid which was non-toxic. It can hardly be considered that the latter organism was a lineal descendant of the typical toxic one; nevertheless, its presence following on that of the previous toxic organism led to the patient being retained in hospital until the barred diphtheroid was proved to be non-toxic.

Cultures from the Ears.

Case 12.—Female, Coast Hospital. Serum cultures were submitted from both ears. Typical diphtheria bacilli were isolated from both. In two pure cultures from the left ear there was acidity in glucose, with no reaction in saccharose and maltose. In a pure culture from the right ear there was acidity in glucose, but no reaction in saccharose. Guinea-pigs inoculated in the usual way with pure cultures from both ears resulted in the death of the unprotected animal inoculated with a culture from the right ear within two days, and of the unprotected one inoculated with a culture from the left ear within three days, with typical post-mortem results, the controls remaining well.

Case 13.—"M.G.," Sister, Coast Hospital Staff. Culture from right ear. Typical diphtheria bacilli were isolated, giving acid on glucose and no reaction on saccharose. A guinea-pig inoculated five days after receipt of the culture with a pure culture in the usual way died within forty-eight hours, the control animal remaining well.

Cultures from the Vagina.

Case 14.—"V.S.," Coast Hospital. Morphological, almost typical diphtheria bacilli were detected in a mixed culture. On plating, the only diphtheroid isolated was a short, rather stout granular organism, banded with usually several bands or granules in each bacillus. Two of the cultures gave acid on glucose and maltose and no reaction on saccharose; the third gave acid on these three sugars. A guinea-pig, inoculated sixteen days after receipt of the swabbing with 1 c.c. of a seventy-two hour broth culture of a pure strain, giving no reaction on saccharose, remained well, as did the control guinea-pig protected with anti-toxin.

Case 15.—"H.E.," Coast Hospital. A culture received on 5th November showed granular, but rather thick, bacilli not quite typical of diphtheria bacilli. After several replatings pure cultures of diphtheroid bacilli, which were not always granular, were obtained. Three of these cultures were tested on sugars; two of them gave acid on glucose and on saccharose, and the other one gave acid on glucose and no reaction on saccharose. Sub-cultures of the latter were inoculated in the usual way into two guinea-pigs. Both the protected and unprotected animals remained quite well.

4. TUBERCULOSIS.

(*a*) Examination of Sputa for Tubercle Bacilli.

(J. B. Cleland and Burton Bradley.)

During the year, 1,017 specimens of sputa were received from general practitioners, &c., to be examined for tubercle bacilli. In addition, 688 sputa were received for the same purpose from the Rookwood State Hospital and Asylum. The following tables of these two series have been kept separate.

Of 1,017 specimens of sputa from private practitioners, &c., 220 were positive, showing a percentage of positive sputa to the number of sputa examined of 21·5 per cent. In only two cases were doubtful results obtained, and in such cases further specimens were asked for. Probably as a result of the notification of pulmonary tuberculosis in the Metropolitan and Newcastle districts, the number of sputa from private practitioners has increased very considerably from 812 in 1914 to 1,017 in 1915. The methods of examination are the same as those detailed in previous reports. The results have been arranged in tables showing the results for each month with the percentage of positives, and the results for each quarter.

In the case of the Rookwood State Hospital results, details are given of the cases examined more than once.

As in previous years, the percentage of positive results during the late winter and early spring months of the year are a little lower than at other periods of the year. This is probably due, as indicated previously, to the prevalence of catarrhal conditions leading to the submission of specimens of sputum whenever such conditions persist for an unduly long period of time.

The results of the examination of more than one specimen of sputum from the same patient in those received from Rookwood State Hospital and Asylum are of considerable interest. In 13 cases the sputum was examined more than once, giving positive results on all occasions. In 14 cases the results of various examinations differed, sometimes being positive, and sometimes negative. In 120 cases the sputum was examined more than once, being negative on each occasion; in some cases the sputum was examined five, six, seven, or eight times; in 2 cases nine times, and in 1 case eleven times, in each instance with negative results. In only two specimens of sputum were doubtful results obtained. Considering that 688 specimens of sputum were received from 337 cases at this hospital, the above results may be considered as very satisfactory, and as indicating that a careful search of the slide for 10 minutes rarely results in missing tubercle bacilli if present in the sputum. Though in 14 cases varying results were obtained,

it

it does not necessarily mean that tubercle bacilli had been present but had not been detected in those specimens in which a negative result was recorded, inasmuch as it may mean that in these particular specimens of sputum, tubercle bacilli were actually not present, the cases being early instances of the disease.

TABLE I.—SHOWING the Results for each Month of the Examination of Sputa from General Practitioners, &c.

Months.	Number of Sputa examined.	Positive results.	Percentage of positive results to number of Sputa examined.	Negative results.	Doubtful results.
January	68	17	25	51	.....
February	66	16	24	50	.....
March	84	20	23·80	64	.....
April	75	18	24	57	.....
May	63	23	36·50	40	.....
June	63	17	26·09	45	1
July	104	19	18·26	85	.....
August	91	13	14·28	78	.....
September	99	15	15·04	84	.....
October	95	19	20	76	.....
November	123	28	22·76	94	1
December	86	15	17·44	71	.....
Total	1,017	220	21·5	795	2

TABLE II.—SHOWING the Positive Results for each Quarter of the Year of the Sputa detailed in Table I.

Quarters of the Year.	Number of Cases.	Positive.	Percentage of Positives.
January, February, March	218	53	24·33
April, May, June	201	58	28·85
July, August, September	294	47	16·98
October, November, December	304	62	20·99

TABLE III.—EXAMINATION of Sputa from the Rookwood State Hospital and Asylum, Lidcombe.

Cases examined.	Number of examinations.	Total positive cases and percentage to cases examined.	Total negative cases and percentage to cases examined.	Total doubtful cases and percentage to cases examined.
377	688	134 (35·54 per cent.)	241 (63·92 per cent.)	2 (·54 per cent,)

TABLE IV.—DETAILS of the Examinations of Sputa from the Rookwood State Hospital and Asylum, Lidcombe.

	Positive.		Negative.		Doubtful.		Total No. of Examinations.	
	Cases.	Sputa.	Cases.	Sputa.	Cases.	Sputa.	Cases.	Sputa.
Cases examined once only	107	107	121	121	2	2	230	230
Cases examined more than once, giving positive results on each occasion—								
Examined twice	10	20	...	...	...	...	10	20
Examined three times	3	9	...	...	...	...	3	9
Cases examined more than once, giving negative results on each occasion—								
Examined twice	...	...	45	90	...	...	45	90
Examined three times	...	...	42	126	...	...	42	126
Examined four times	...	...	17	68	...	...	17	68
Examined five times	...	...	6	30	...	...	6	30
Examined six times	...	...	4	24	...	...	4	24
Examined seven times	...	...	2	14	...	...	2	14
Examined eight times	...	...	1	8	...	...	1	8
Examined nine times	...	...	2	18	...	...	2	18
Examined eleven times	...	...	1	11	...	...	1	11
Cases examined more than once, giving different results on various occasions—								
Examined twice— Positive once, Negative once	7	7	...	7	...	...	7	14
Examined three times— Positive twice, Negative once	2	4	...	2	...	...	2	6
Examined four times— Positive once, Negative three times	4	4	...	12	...	...	4	16
Examined four times— Positive once, Suspicious once, Negative twice	1	1	...	2	...	1	1	4
	134	152	241	533	2	3	377	688

(*b*) Examinations of Urine for Tubercle Bacilli.

(J. B. Cleland.)

Urine from 35 cases searched for the presence of tubercle bacilli revealed the organism in four. Animal inoculations were not made in these cases. In two of the other cases in which smears did not reveal the presence of tubercle bacilli, guinea-pig inoculations were made, in both instances with negative results.

(*c*) Examination of Butters and Milk for Tubercle Bacilli.

(J. B. Cleland.)

Between 11th December, 1913, and 27th April, 1914, nineteen samples of butter were obtained from various commercial sources for the purpose of ascertaining their freedom or otherwise from tubercle bacilli. Some of the samples were obtained in Sydney, and others from the North Coast of this State.

A portion of the butter was taken in each instance and shaken well in water slightly warmed. After thorough shaking, the emulsion was centrifuged and the deposit therefrom was used for examination. No tubercle bacilli were seen in smears, and the deposits injected into guinea-pigs in no instance resulted in the presence of any lesions indicative of the presence of tubercle bacilli.

In addition to the butters, at the same time six milks were obtained from the Metropolitan area, and the centrifuged deposits injected into guinea-pigs. In no instance did these animals develop tuberculosis.

Though the number of butters examined is small, it is certainly satisfactory that in no single one of the nineteen samples examined were we able to detect the presence of tubercle bacilli.

5. LEPROSY.

(J. B. Cleland.)

During the year eleven specimens were received for examination for leprosy bacilli in cases of leprosy or suspected leprosy or from *post-mortem* examinations on lepers. These were derived from nine different individuals. Three of the nine showed the presence of leprosy bacilli and six did not. Of the three cases in which leprosy bacilli were found, in one instance the examination was made for diagnostic purposes; in the other two, material was received from *post-mortem* examinations.

Case 1.—Chinaman. Examination made for diagnostic purposes on account of the left great toe showing chronic ulceration, the rest of the toes and both feet being purplish and atrophied, and the nails tending to disappear. The right ulnar nerve showed an indefinite uniform slight thickening and felt rather fibrous. The eyebrows were not thickened at all. The nostrils were very patent, and there was a very offensive ozœna smell from them. There were no other lesions detected suggestive of leprosy.

Smears from the nostrils showed the presence of typical leprosy bacilli in masses, but not numerous. Smears from the ulcers of the toe did not reveal any acid-fast bacilli. (*See* Leprosy Report, P. 142, Appendix C, New Case CXL.)

Case 2.—"G." (*See* Leprosy Report, Appendix C, Deaths, Case CIII.) *Post-mortem* material received from the Coast Hospital on 5th March was examined as follows:—

Liver—
Firm, a whitish area present near the surface.
Sections:—Apparently normal.
Acid-fast bacilli were not detected.

Lung—
Firm, apparently consolidated, dark reddish in colour. Sinks in water.
Sections.—Alveoli filled with blood and a few desquamated cells; fibrin not obvious; much blood pigment in the septa.
Acid-fast bacilli were not detected.

Testicles—
Small and atrophied; the left smaller than the right.
Sections.—Right.—Testicular tissue proper gone. Organ consists chiefly of dense fibrosed tissue with thick vessels and occasional tubules replaced by hyaline thickenings of their walls. Occasional irregular tubules lined by a cubical epithelium, probably the remains of ducts; also occasional small collections of round cells. Acid-fast bacilli were not detected. Left.—Large cellular areas containing a few plasma cells; also a small cystic space lined by low columnar epithelium, and irregular branching spaces resembling an intracanalicular fibroadenoma of the breast, probably derived from the epididymus.
Acid-fast bacilli were not detected.

Kidneys, right and left—
Both appear somewhat congested.
Sections.—Slight congestion of the vessels. The walls of the vessels are slightly thickened. Left kidney shows a collection of what looks like bundles of unstriped muscle under the capsule.
Acid-fast bacilli were not detected.

Spleen—

Spleen—
Large, firm and fibrous.
Sections.—Moderately diffusely fibrosis with considerable pigment.
Two very doubtful acid-fast bacilli in a fibrous strand.
Right ulnar nerve—
Appears somewhat thickened.
Cross sections.—Dense fibrotic thickening of the perineurium extending in between the nerve bundles, with occasional round cells between, compressing the nerve bundles and causing some atrophy, but not invading them.
Longitudinal sections.—Areas of round-cell infiltration.
Acid-fast bacilli were not detected.

Case 3.—"M." (*See* Leprosy Report, Appendix C, Deaths, Case CXXXIV.) *Post-mortem* material received from the Coast Hospital on 8th July was examined with the following results :—

Right lung—
Somewhat congested.
Sections.—Much congestion of the vessels, with many alveoli occupied by exudate or catarrhal cells. Some thickening of septa and occasional areas of fibrosis. Vessels thickened.
No acid-fast bacilli seen.
Left lung—
Portion of lower lobe consolidated.
Sections.—Alveolar septa a little thickened. Alveoli filled with leucocytes and some catarrhal cells and exudate in places. Some of the cells contain old blood pigment.
No acid-fast bacilli seen.
Heart—
Pale and fatty-looking.
Sections.—Nil definite.
No acid-fast bacilli seen.
Liver—
Pale and fatty-looking.
Sections.—Nil definite.
No acid-fast bacilli seen.
Spleen—
Large, firm and fibrous.
Sections.—Sinuses distended with blood, and with masses of blood pigment.
No acid-fast bacilli seen.
Suprarenals—
Apparently normal.
Sections.—Nil definite.
No acid-fast bacilli seen.
Pancreas—
Firm, apparently normal.
Sections.—Some small areas, usually near septa, of old hæmorrhages, infiltrated with leucocytes some of which contain old blood pigment.
No acid-fast bacilli seen.
Right sciatic nerve —
Enlarged.
Sections.—Transverse section shows fibrosis surrounding the bundles and also penetrating between the fibres. Longitudinal section shows much fibrosis.
No acid-fast bacilli detected.
Right ulnar nerve—
Enlarged.
Sections.—Longitudinal section shows great increase in fibrous tissue, practically obliterating the fibres.
Scattered, mostly degenerate, groups of acid-fast bacilli.
Kidneys—
Conjoined horseshoe.
Sections.—Cortex diminished, intramedullary portion large. Marked increase in interstitial tissue, tubules open, lined by low epithelium; glomeruli fibrous, in many cases almost obliterated by fibrous tissue.
No acid-fast bacilli seen.

Of the six negative cases the following may be referred to :—

Case 4.—The patient had had injuries to the foot, and now showed extensive reddish discolouration with swelling round the toes of the left foot. Two of these toes had been amputated. There was now no discharge of pus. On the other foot there was a smaller area of redness and swelling. There were no other lesions suggestive of leprosy. Smears did not reveal the presence of acid-fast bacilli, and a section from the thickened area on the foot showed only some granulomatous infiltration in fibrous tissue without the presence of acid-fast bacilli.

Case 5.—This patient (a woman) had marked atrophic lesions on the left hand with anæsthesia. There was no nodular thickening, though some scabbiness. The ulnar nerve was thickened and nodular at the elbow. Smears made from the scabby area in the hand, from a small scabby area below the nose (probably adventitious) and from both nostrils, all proved negative as regards the presence of acid-fast bacilli.

6. MENINGITIS.

(J. B. Cleland.)

With the recent occurrence of outbreaks of Cerebro-spinal Fever in Great Britain, Canada, Egypt, New Zealand, and Australia, more or less associated with the gathering together of large numbers of men for military purposes, the consideration of all cases of meningitis occurring not only during the epidemic period, but also when cerebro-spinal fever (including "basal meningitis") is relatively absent, becomes of much interest and importance. For instance, it is of considerable value to ascertain whether cases of cerebro-spinal fever occur with any degree of frequency in the absence of an epidemic, and also whether during an epidemic there is an increase or not of forms of meningitis due to organisms other than the *Meningococcus, e.g.*, the *Pneumococcus*. In the former instance the presence of occasional cases of cerebro-spinal fever due to the *Meningococcus* would show that the foci of infection exist in a community but for some reason the disease does not spread. In the second instance, if there were an increase in forms of meningitis due to other organisms, it would suggest that some factor was present favourable to infection of the meninges, to some extent apart from the specific nature of the individual organism, that is to say, there might be some predisposing cause rendering the meninges more vulnerable to invasion by organisms. Bearing the above points in mind, we have reviewed, for record purposes, the routine specimens of cerebro-spinal fluids received in 1914 and 1915. As yet, the data are too few to express any opinion on, but in the course of a few years valuable information should be collected. The 1914 specimens were briefly referred to in our Fifth Report (p. 5); whilst in *The Medical Journal of Australia* (April 3rd, 1915, p. 308) Dr. Ferguson and myself briefly described two cases in which Gram negative bacilli of the influenzal group were present, as well as two cases of pneumococcal infection. Cerebro-spinal fluid was received from eleven cases in 1914, and from twenty-three cases in 1915.

Details of 1914 Cases.

Streptococcal Meningitis.—The patient was a baby 11 months old, living at Young. *Streptococci* were detected in smears of the fluid when received, in some cases occasional rod-shaped forms being seen in which individual cocci had not yet separated. Typical *Streptococci* were obtained in cultures. The child died.

Pneumococcal Meningitis, or probably Pneumococcal Meningitis.—Three cases are included under this heading, one being from a child at Manilla, who recovered. A vaccine was supplied in this case, and two doses were administered, with four days' interval between; the child had begun to recover before its use. The second case followed a fracture of the skull. The third case came from Sydney—the organisms isolated gave no reaction in mannite or inulin, acid in lactose and saccharose, acid in raffinose, but only after nine days, and acid and clot in milk after nine days.

Gram Negative Bacilli of the Influenzal Group.—Two cases due to this organism occurred, details of which are given in *The Medical Journal of Australia*.

It is interesting to note that about the same period Dr. Tebbutt described a case in New South Wales, and Dr. Atkinson one in Perth, apparently due to the same organism. Dr. Bradley also informs me that about the same period he had two cases of meningitis in which Gram negative bacilli, which he failed to cultivate, were present. He regards these as being probably due to the same organism.

Meningococcal Meningitis.—In two specimens of purulent cerebro-spinal fluid, one from Queanbeyan and one from Newcastle, Gram negative *Diplococci*, probably *Meningococci*, were found in smears. Probably owing to the length of time the specimens had taken to reach us, we were unable to cultivate these.

Other Cerebro-spinal Fluids.—Of the other three, one was a clear fluid in which no organisms were grown; the second was taken from a child on the day of death, when again no organisms were detected; whilst the third was from a child 10 months old at Manilla, who had whooping cough, and then broncho-pneumonia followed by symptoms of meningitis. Fluid from this case also proved negative.

Details of Cases during 1915.

Streptococcal Meningitis.—One case of this type occurred.

Pneumococcal Meningitis.—Four cases were due to *Pneumococci*. One was a case at Narandera; the second was a case in a suburb of Sydney, in a child aged 7 years; the third was from a *post-mortem* examination carried out at the request of the Coroner; and the fourth was in a girl at Yass, who died.

Meningococcal Meningitis.—Four cases were due to this organism, and it is probable that a considerable number of the fourteen cases in which the causative organism was not detected belonged to this category. Owing to the length of time which many specimens take to reach us from country districts, there was ample opportunity for the *Meningococcus*, if present, to die out. Swabbings from the naso-pharynx examined for the *Meningococci* were negative in eight civilian cases. In seven Naval Reserve contacts of a case of the disease, the organism was isolated in two. These exhibited the typical morphological and cultural appearances, and gave acid in glucose and maltose, but not in saccharose.

Details of cases examined at the Liverpool Branch Laboratory.

At this laboratory, whilst under our jurisdiction, specimens of cerebro-spinal fluid from twenty-eight cases of meningitis, or supposed meningitis, were examined. As in some instances tappings for cerebro-spinal fluid were continued for a long time, it may be of interest to give briefly the results of these tappings, indicating the amount of fluid, and whether the *Meningococcus* was present or not :—

Ref. No.	Date.	Description of Fluid.	Result of examination for *Meningococci*.
	1915.		
7	12 Aug....	.....	+ (Prof. Welsh.)
8	12 Aug ...	.....	+ (Prof. Welsh.)
	16 Aug....	.....	+ (few.)
	18 Aug....	.....	—
16	13 Aug....	.....	+
	15 Aug....	.....	+
	16 Aug....	.....	+
	17 Aug....	.....	+
42	18 Aug....	About 15 c.c. clear fluid, with blood-tinted purulent deposit. Patient died, 18th August, 1915.	+ (few.)
71	22 Aug....	10 c.c fluid, little deposit	—
	26 Aug....	·5 c.c fluid, slightly blood-stained, no deposit. Pt. died, 27th August, 1915.	—
97	28 Aug....	About 30 c.c. fluid, small deposit.....	+ (glucose acid; saccharose, no change.)
	2 Sept....	25-30 c.c. clear fluid.....	+ (glucose and maltose acid; saccharose, no change.)
	7 Sept....	30 c.c. slightly turbid fluid, very little deposit ...	—
	15 Sept....	40 c.c. blood-stained fluid with incomplete clot...	—
	6 Oct. ...	About 40 c.c. clear watery fluid	+ (glucose and maltose acid; saccharose, no change.)
	10 Oct. ...	7 c.c. slightly turbid fluid, no deposit	—
	12 Oct. ...	About 25 c.c. slightly turbid fluid, little deposit...	—
	14 Oct. ...	About 45 c.c. clear fluid, with suspended membranous clot.	+
	15 Oct. ..	Serum injected intrathecally.	
	16 Oct. ...	About 25 c.c. clear fluid, a few flocculi.....	—
	23 Oct. ...	15 c.c. clear fluid	+ (1 col.; glucose and maltose acid; saccharose, no change.)
	28 Oct. ...	About 30 c.c. clear fluid, practically no deposit...	—
	31 Oct. ...	About 30 c.c. clear fluid, no deposit	+ (few.)
	2 Nov...	About 35 c.c. clear fluid, no deposit.....	+ (few.)
	4 Nov....	About 25 c.c. clear yellow tinted fluid, no deposit	+
	6 Nov....	About 20 c.c. clear pale yellow-tinted fluid, no deposit, slight membrane.	+ (few.)
	11 Nov....	25–30 c.c. clear pale yellow fluid, no deposit slight membrane.	+ (few.)
	15 Nov....	25–30 c.c. clear fluid. no deposit	+ (few.)
	25 Nov....	30 c.c. clear fluid, slight deposit	+ (few.)
132	4 Sept....	35–40 c.c. turbid fluid, little deposit	+ (glucose acid.)
	9 Sept....	35 c.c. clear fluid	—
	15 Sept....	40 c.c. clear fluid, scanty deposit	+
	7 Oct. ...	60–70 c.c. clear fluid, little deposit	+ (glucose acid; saccharose an maltose, no change.)
	10 Oct. ...	30–35 c.c. slightly turbid fluid, little deposit.....	+ (glucose and maltose acid saccharose, no change.)
	12 Oct. ...	25-30 c.c. turbid fluid, little deposit	+
	14 Oct. ...	About 40 c.c. clear fluid with a few flakes of fibrin.	+
	16 Oct. ...	About 35 c.c. clear fluid,.....	—
135	4 Sept....	A small quantity of blood-stained fluid. Patient	—
	5 Sept....	died, 7 September, 1915.	
158	10 Sept....	About 30 c.c. fluid, moderate deposit	+
	17 Sept....	.....	—
181	14 Sept....	55 c.c. clear fluid, no deposit	—
182	14 Sept....	40 c.c. clear fluid, no deposit	—
197	17 Sept....	30 c.c. slightly turbid fluid, with deposit	+
218	21 Sept....	35–40 c.c. turbid fluid, fair deposit on standing...	+ (glucose acid; maltose acid in three days; saccharose, no change.)
	7 Oct. ...	30–35 c.c. fluid with suspended flocculi, very small deposit.	—
	10 Oct. ...	15-20 c.c. faintly turbid fluid	+
	12 Oct. ...	About 40 c.c. slightly turbid fluid. little deposit...	—
	14 Oct. ...	About 15 c.c. clear fluid, with thread of blood-tinted fibrin.	+
	16 Oct. ...	About 35 c.c. clear yellowish fluid, no deposit.....	—
273	22 Sept.	60-70 c.c. turbid fluid, deposit	+ (glucose acid; maltose, saccharose, no change.)
	6 Oct. ...	About 40 c.c slightly turbid fluid, with jelly-like clot.	—
233	23 Sept....	5–6 c.c. slightly blood-stained fluid, small deposit of red cells.	—
	23 Sept....	5–6 c.c. blood stained fluid. Patient died, 1st October, 1915.	—
281	8 Oct. ...	2 c.c. clear fluid. Patient died 8th Oct., 1915 ...	+
282	8 Oct. ...	15-18 c.c clear fluid.....	—

Ref. No.	Date.	Description of Fluid.	Result of examination for *Meningococci*.
	1915.		
282	10 Oct. ...	10 c.c. slightly turbid and blood-stained fluid.....	+ ? (not isolated Gram negative cocci seen in smears.)
	12 Oct. ...	·5 c.c. clear fluid, no deposit	— (Gram positive streptococcal forms in cultures.)
	14 Oct. ...	About 20 c.c. clear fluid, small blood clot	—
	15 Oct. ...	Serum injected intrathecally.	
	16 Oct. ...	About 30 c.c. clear fluid, with suspended membranous clot.	—
	27 Oct. ...	About 45-50 c.c. slightly blood-stained fluid, with suspended clot.	— (pneumococci ?)
	29 Oct. ...	About 15 c.c. slightly blood-stained fluid	— (pneumococci ?)
	31 Oct. ...	About 35 c.c slightly yellow fluid.....	— (Gram positive streptococci in chains up to 20.)
	2 Nov. ...	About 30 c.c. clear fluid, no deposit	— (Gram positive cocci in pairs)
	5 Nov. ..	About 30 c.c. clear fluid, no deposit	—(Gram positive streptococci.)
	8 Nov. ..	About 35 c.c. slightly turbid blood-stained fluid, with a gelatinous membranous clot.	—
	11 Nov. ...	35-40 c.c. clear fluid, with membranous clot	— (Gram positive streptococci)
286	10 Oct. ...	35 c.c. slightly turbid, slightly blood-stained fluid	—
304	12 Oct. ...	About 60 c.c. turbid fluid, considerable deposit...	+
	14 Oct. ...	About 30 c.c. moderately turbid fluid, with heavy deposit. Patient died, 14th October, 1915.	+
306	12 Oct. ...	About 50 c.c. turbid fluid, fair deposit	+
	14 Oct. ...	About 60 c.c. slightly turbid fluid, with moderately heavy purulent deposit.	+
	15 Oct. ...	About 90 c.c. turbid fluid, heavy deposit	+
	15 Oct. ...	Serum injected intrathecally.	
	16 Oct. ...	About 30 c.c. yellow straw-coloured fluid, with turbid yellow deposit and suspended particles. Patient died, 16th October, 1915.	+
349	15 Oct. ...	Serum injected intrathecally.	
	16 Oct. ...	About 45 c.c. rather turbid fluid	+
	17 Oct. ...	45–50 c.c. fluid, heavy deposit	+
	18 Oct. ...	About 35 c.c. turbid fluid, deposit	+
	19 Oct. ...	About 5 c.c. turbid fluid, deposit.....	—
352	16 Oct. ...	35–40 c.c. clear fluid, no deposit	—
	17 Oct. ...	20–25 c.c. clear fluid, no deposit	—
360	17 Oct. ...	About 30 c.c. clear fluid, no deposit	—
381	24 Oct. ...	35 c.c. clear fluid, little deposit	(Cultures contaminated.)
	25 Oct. ...	About 20 c.c. clear watery fluid, no deposit.....	—
382	24 Oct. ...	60 c.c. turbid fluid, deposit on standing	+
	25 Oct. ...	35 c.c. yellowish fluid, slightly blood-stained deposit.	+
	26 Oct. ...	70–75 c.c. slightly yellow clear fluid, no deposit...	+
	27 Oct. ...	About 35 c.c. yellow-tinted fluid, moderate deposit	+
	28 Oct. ...	About 20 c.c. clear fluid, very slight deposit	+
	29 Oct. ...	About 40 c.c. slightly turbid fluid, small deposit...	+
	30 Oct. ...	25–30 c.c. slightly yellow turbid fluid, very little deposit.	+ (few.)
	31 Oct. ...	About 50 c.c. clear fluid, suspended flocculi, very slight deposit.	+ (few.)
	1 Nov. ..	About 60 c.c. clear yellowish fluid, no deposit.....	+ (few.)
	2 Nov. ..	About 60 c.c. clear yellowish fluid, no deposit.....	+ (few.)
	4 Nov. ..	About 55–60 c.c. clear yellowish fluid, no deposit	—
	6 Nov. ..	About 35 c.c. clear yellow fluid, slightly blood-stained deposit.	—
	8 Nov. ..	55–60 c.c. yellowish fluid, little deposit.....	+ (few.)
	9 Nov. ..	About 50–55 c.c. clear yellow fluid, little deposit...	+ (few.)
	11 Nov. ..	40 c.c. yellow fluid, blood-stained membrane, slight deposit.	+
	12 Nov. ..	About 45 c.c. yellowish fluid, deposit	+ (glucose and maltose acid; saccharose, no change.)
	14 Nov. ..	25 c.c. clear yellow fluid, membranous clot, small deposit.	+
	16 Nov. ..	55 c.c. yellow fluid, gelatinous clot, slight deposit	+
	18 Nov. ..	About 30 c.c. brilliant amber-coloured slightly turbid fluid, slight deposit.	+ (few.)
	21 Nov. ..	About 8 c.c. canary yellow fluid, gelatinous clot, no deposit.	—
	22 Nov. ..	About 15 c.c. dark yellow fluid, slight deposit. Patient died, 22nd November, 1915.	(Cultures contaminated.)
383	24 Oct. ...	40 c.c. clear fluid	—
	26 Oct. ...	About 30 c.c. clear fluid, very little deposit.....	—
392	26 Oct. ...	About 5 c.c. clear fluid	+ ? (a few doubtful Gram negative diplococci seen.)
	29 Oct. ...	8–10 c.c. clear fluid, little deposit.....	—
417	30 Oct. ...	About 30 c.c. turbid fluid, deposit.....	+
	31 Oct. ...	About 40 c.c. slightly turbid fluid, deposit.....	+
	1 Nov....	About 45 c.c. turbid fluid, deposit	+
	2 Nov....	About 50–55 c.c. watery fluid, little deposit	+
	4 Nov....	About 35 c.c. clear fluid, no deposit	+
	5 Nov....	About 35 c.c. slightly turbid fluid, with slight deposit.	+
	6 Nov....	About 45 c.c. clear fluid, slight deposit	+
	8 Nov....	About 45 c.c. clear fluid, no deposit	+ (few.)
	9 Nov....	About 30 c.c. clear fluid, small blood clot	+ (1 col.)

Ref. No.	Date.	Description of Fluid.	Result of examination for *Meningococcocci.*
	1915.		
417	11 Nov....	55–60 c.c. clear fluid, slight deposit	+
	12 Nov....	About 40 c.c. clear fluid, no deposit	+
	14 Nov....	25 c.c. slightly turbid yellowish fluid, membranous clot, slight purulent deposit.	+
	16 Nov....	45 c.c. yellow fluid, gelatinous clot, slight deposit	+
	17 Nov....	About 35 c.c. clear very pale yellow fluid, no deposit.	+ (few).
	19 Nov....	About 40 c.c. faint yellowish fluid, no deposit ...	+
	20 Nov....	About 35 c.c. canary yellow fluid, small deposit	—
	21 Nov....	About 30 c.c. clear yellow fluid, little deposit ...	+
	22 Nov....	About 35–40 c.c. faintly yellow fluid, no deposit	— (Gram positive streptococci in cultures.)
	23 Nov....	About 40 c.c. rich amber-coloured fluid, suspended coagulum, slight deposit of blood.	+ (glucose and maltose acid; saccharose, no change.)
	25 Nov....	60 c.c. yellow fluid, gelatinous clot, slight deposit. Patient died, 12th December, 1915.	+
443	5 Nov....	About 8 c.c. quite clear fluid	—
475	11 Nov....	25 c.c. clear fluid.....	—
528	22 Nov....	About 25 c.c. turbid fluid, deposit	+
	23 Nov....	About 25 c.c. watery fluid, little deposit.....	+
	24 Nov....	25 c.c. turbid fluid, little deposit	+
	25 Nov....	40 c.c. clear fluid, moderate deposit	—
623	14 Dec. ...	.....	—

In addition to the examinations of cerebro-spinal fluid, a large number of swabbings from the naso-pharynx of convalescents, contacts, and possible contacts were examined. Of these, 153 were negative; in 39 the examination was commenced but not completed by us, the plates being forwarded elsewhere; in 9 cases apparently typical *Meningococci* were isolated; in 15 cases Gram negative *Diplococci*, morphologically suspicious, were isolated, and proved not to be the *Meningococcus*; in 13 cases suspicious organisms were detected in cultures, but were not isolated.

7. SYPHILIS.

Results of the Wassermann Reactions for 1915.

(E. W. Ferguson.)

During the year 625 specimens of blood and 3 specimens of cerebro-spinal fluid were tested by the Wassermann reaction; in addition, 30 samples submitted were not in a suitable state for testing. The 628 samples tested were from 602 cases, and the results are shown in Table I; the results of the cases tested more than once are shown in Table II. The results are divided into positive (+), incomplete positive (+ —), incomplete negative (+ — —), and negative (—). As far as possible the cases have been tabulated according to the stage of the disease present or suspected; it is doubtful, however, how much value attaches to these results, as when a negative result was given, no information is in most cases available as to whether the case turned out to be certainly syphilitic or some other disease. In many cases the brief history available suggested that a case was certainly syphilitic, whilst in others the test appeared to be relied on to differentiate between syphilis and some other disease. With more data it would be possible and preferable to tabulate separately according to these conditions. As in previous years, the bulk of the specimens were submitted without any data at all as to the stage of the disease.

Table I.

Result of Wassermann's Reaction.

Suspected Nature of Cases.	Positive.	Incomplete positive.	Incomplete negative.	Negative.	Total.
Primary syphilis	23	3	2	37	65
Secondary syphilis	59	3	1	39	102
Tertiary syphilis	25	3	2	46	76
Suspected syphilis (no data)	96	20	10	177	303
Cerebral syphilis	6	1	.....	18	5
Congenital syphilis	1	1	.....	3	5
Tabes dorsalis	.....	.....	.....	5	5
General paralysis of the insane	.....	.....	.....	3	3
Leprosy	1	.....	.....	.....	1
Normal (controls)	4	2	.....	37	43
Totals	215	33	15	365	628

Among the tertiary syphilitic lesions have been included cases of chronic ulceration of the leg. The result of the Wassermann reaction showed that half of these at least were syphilitic in nature. Out of eleven cases, 5 gave a complete positive, 1 an incomplete positive, and 5 negative reactions.

During the year fifty-six specimens of blood were examined from prisoners, no data as to the stage of the disease being supplied. Of this number, 27 gave a complete positive, 7 an incomplete positive, 3 an incomplete negative, and 19 a negative result.

Three

Three specimens of cerebro-spinal fluid were tested, one from a case of syphilis, one from a case of tabes dorsalis, and one from a suspected case of cerebral syphilis; all gave negative reactions. One case of leprosy was tested, and gave a positive result—a previous test made in Melbourne was also positive; there were no signs and no history of syphilis.

TABLE II.

RESULTS of Specimens tested more than once.

Case.	First Test.	Second Test.	Third Test.	Fourth Test.	Remarks.
Primary Syphilis—					
Ws.	—	+ 16 days later.	+	...	2 injections "606" between 2nd and 3rd tests.
Wd.	+	+	...	...	
I.	+	—	—	...	
L.	—	—	...	...	
Secondary syphilis—					
B.	+	+	+	...	
D.	+ —	+	...	...	
B.	+ — —	—	...	...	
Tertiary syphilis—					
R.	—	—	...	...	2nd test after provocative dose ·3 grm. "606."
B.	+	+	+	...	
C.	+ (2-11-14)	+	+	+	
W.	+ — —	+ (after provocative dose 606)	...	...	Salvarsan ·3 gr. 18-5-15; 3-6-15; 16-6-15.
G.	+	—	+	—	Caries of superior maxilla. 1 injection between 1st and 2nd tests, and 1 injection between 2nd and 3rd tests.
S.	+	+	...	...	2 injections "606."
Syphilis (no data)—					
T.	+ (2 years prev.)	—	...	...	·4 gr. Salvarsan. ·3 gr. Neosalvarsan.
L.	+ (date uncertain.)	+	...	...	8 injections "606," last in October, 1913.
G.	+ — —	+ —	...	...	
P.	—	—	...	...	3 doses "606."
T.	—	+ —	...	—	
Cerebral syphilis—					
B.	—	—	...	...	
G.	—	— (c. sp. fl.)	...	...	
Tabes dorsalis—					
M.	—	— (c. sp. fl.)	...	...	

8. VACCINES.

(J. B. CLELAND.)

A large number of vaccines have again been prepared and issued during the year under review. The conditions in which they have been used have been very varied, and whilst in some cases no good result followed, in other disease conditions very successful results have ensued upon their administration. Our previous impression, that in any disease due to bacterial organisms or secondarily infected by such organisms, the administration of a vaccine is worth trying when other measures fail or are not completely successful, has been confirmed by these later results.

Acne, Boils, and other Skin Conditions.—Vaccines have been required for only a few cases of common acne. In all these *Staphylococcus albus* was found, and occasionally *Staphylococcus aureus*. Various attempts to grow the acne bacillus met with very poor success. The consequence was that most of these cases received a vaccine of *Staphylococcus albus* only with somewhat disappointing results, as "three seemed unaffected, two improved, whilst in another the result was said to be perfectly satisfactory." In a large number of pyogenic infections, such as boils, *S. aureus* was found and a vaccine made. In many of the instances in which it was used the patient was said to have been cured. As patients usually naturally recover from attacks of boils, these results must be accepted with some reserve, but in several cases the patient had been suffering for some time from recurring attacks of such boils. The vaccine apparently arrested the condition in these cases when other measures failed to do so. The usual organism in abscesses was also found to be *Staphylococcus aureus*.

Pyæmia.

Pyæmia.—In three cases of pyæmia, *Streptococci* and *Staphylococcus aureus* were found in one, *Streptococci* in a second, and *Streptococci* and *Staphylococcus albus* in a third. The last patient recovered, the second case showed very slight improvement, and the first died.

Sinuses.—Various organisms were found in chronic sinuses, the most usual being *Staphylococcus aureus* and *Streptococci.* In addition diphtheroid bacilli were not infrequently met with as well as coliform organisms and occasionally *B. pyocyaneus* and *B. proteus.* As some of these sinuses were of a tubercular nature the organisms found were obviously secondary invaders.

Taking the results as a whole, the use of vaccines in these cases seems sometimes to serve a useful purpose, as cure seems to have been hastened in a few of the cases whilst others showed some definite improvement, though a considerable number were unaffected.

Infections of the Mouth, Nose, Eye, Ears, &c.—Mixed vaccines, usually containing *Streptococci,* were prepared from various cases of pyorrhœa alveolaris associated with osteoarthritis. In three of these no improvement resulted, but in one the patient considered that she was better than she had been for years.

Infections of the Urinary Tract.—Over sixty specimens of urine were submitted and vaccines prepared from the organisms found present. In the vast majority of these cases coliform bacilli were found, though occasionally *Streptococci, B. proteus, Staphylococcus albus, Staphylococcus aureus,* and other organisms were found. Though in many instances no report has been furnished as to the value of the vaccines in these cases of bacteriuria—usually bacilluria—in a considerable number of others the patient was considered cured, and in a number of other cases improved. The cases of bacilluria associated with pregnancy usually did well under this treatment.

Blood Cultures.—In a few cases cultures from the blood were made. In a case of septic endocarditis, *S. aureus* was isolated, but the result of the vaccine treatment is not known. In four cases of puerperal septicæmia *Streptococci* were found in two and *Staphylococcus aureus* in two. Three of the patients died, and the other—a *Staphylococcus aureus* case—was unaffected by the vaccine, natural improvement having set in. In a case of septicæmia following on scarlatina, *Streptococci* were found; the patient died.

Infections of the Uterus.—In three cases of infections of the uterus following parturition or abortion, *Streptococci* were found in all three, associated with *S. aureus* in one. One patient recovered after the use of a streptococcal vaccine.

Respiratory System.—A considerable number of specimens of sputum were submitted for various respiratory conditions, including secondary infections in tubercular cases. As a rule mixed vaccines were prepared from the organisms grown in culture, and their application has led in occasional cases to definite improvement. The use of such vaccines in tubercular cases suffering from secondary infections seems nearly always to be worth trying, as in several instances some decided improvement in the condition of the patients has resulted.

Anti-typhoid Vaccines.—During 1915 the Staff was busily occupied in the preparation of anti-typhoid vaccine for military purposes. In this connection 158,605 c.c. were forwarded, whilst in addition 2,510 c.c. were supplied to medical practitioners. The standardisation was 1,000 mill. per c.c.

Contagious Mastitis of Bovines.—In previous reports we have detailed the apparently valuable clinical results following prophylactic and curative inoculations of a vaccine made from the streptococcus of contagious mastitis. During the year a large amount of vaccine has been supplied, consisting of the following:—276 doses standardised to 10,000 mill. per c.c.; 276 doses standardised to 20,000 mill. per c.c.; 276 doses standardised to 30,000 mill. per c.c. Information to hand from the Stock Department is to the effect that the use of this vaccine has proved of very definite value in preventing economic loss in dairy herds in parts of the South Coast, where this disease has been prevalent.

Acne, Furunculosis, and Infective Conditions of the Skin and Subcutaneous Tissues.

No.	Disease.	Specimen.	Organism found.	Organism from which vaccine was prepared.	Reporter.	Course, Dosage, &c.	Result	Notes.
15/567	Acne	Pus	*Staphylococcus albus*	*Staphylococcus albus*	Dr. J. Pirie	Patient received one dose. He then enlisted, and I have lost touch with him.		
15/768	Acne	Pus from face	*S. albus*	*S. albus*	Dr. A. G. Cooley	Course, two months. 100 mill. up to 500 mill.	Nil.	
15/1257	Acne	Pus from face	*S. albus*; a few *S. aureus*	*S. albus*	Dr. Machattie, Bathurst Hospital.	Course, three months. 500 mill. every fourth day for two months and for next month one dose weekly. No other treatment except baths and aperients.	Perfectly satisfactory	The acne gradually decreased from almost the initial dose. The case was a very bad one.
15/1617 2135	Acne	Cultures and smears	(1) *S. albus* (2) Later—*S. aureus* and *albus* and coliform bacillus.	(1) *S. albus* (2) Mixed *S. albus* and *S. aureus*.	Dr. Keith Smith			
15/1973	Acne	Culture from pustule on face.	*S. aureus*; a few *S. albus*	*S. aureus*	Laboratory	Course, two months. Eight injections. 50 mill. increased to 500 mill.	Improved	
15/1953 16/564	Acne and small boils	Pus from acne pustule	*S. albus*	*S. albus*	Dr. A. G. Cooley	Course, five weeks. 500 mill. each week	Nil.	
15/5175	Acne	Cultures from acne pustule.	*S. albus*	*S. albus*	Captain Macintosh, Garrison Hospital.	Course, one mouth. Seven injections. 50 mill. up to 400 mill.	Improved	
15/2847	Acne	Pustules from face	*S. albus*	*S. albus*	Dr. Van Someren	Course, about a month. Ten injections. Initial dose 250 mill., subsequent doses 500 mill. every two or three days.	Unaffected	Iron tonics with arsenic, and unguents of mercury.
15/6059 16/1830	Sycosis	Cultures from eruption on face.	*S. albus*	*S. albus*	Dr. McDonagh	Course, seven weeks. 500 mill. Iron and arsenic.	Improved	Papules, vesicles and pustules present for nineteen years in varying degrees.
15/1044	Pustules on arm	Culture from pus	*S. aureus*	*S. aureus*	Dr. K. Harvey Grieve. Goulburn District Hospital.	No data obtainable		Reporter on Active Service.
15/251	Furunculosis of forearm	Pus from boil	*S. aureus*	*S. aureus*	Dr. Bruce Hittmann	No data available		
15/348	Furunculosis	Cultures from arm	*S. aureus*	*S. aureus*	Dr. G. Clarke	Course, about two weeks. Four injections of 500 mill. each.	Cured	No other treatment.
15/438	Furunculosis	Pus from boil	*S. aureus*	*S. aureus*	Dr. Keith Smith	Course, two weeks. Initial dose, 100 mill.; ultimately 500 mill., at intervals of four days.	Cured	Patient suffered from a further crop after first dose. These quickly disappeared and none have been noticed since.
15/807	Furunculosis	Culture from boils	*S. aureus*	*S. aureus*	Coast Hospital	Course, four weeks. 50 mill. repeated weekly and increased until dose was 200 mill. Foments and antiseptic lotions.	Improved	Patient had enteric fever, then diphtheria, and later scarlet fever with crops of boils.
15/946 1939	Furunculosis (facial)	Pus from boils	*S. aureus*	*S. aureus*	State Children's Relief Department.	Vaccine not used		
15/1066	Furunculosis	Pus	*S. aureus*	*S. aureus*	Dr. Van Someren	Course, about three weeks. Six injections from 250 mill. to 500 mill.	Cured	No other treatment.
15/1070	Furunculosis	Pus	*S. aureus*	*S. aureus*	Dr. G. Clarke	Course, three weeks. Dose 500 mill.	Improved; no recurrence for fifteen months.	Recurrent attacks of boils.
15/1526	Furunculosis	Swab from boils	*S. aureus*	*S. aureus*	Captain Lalor, Duntroon Military College.	Course, three weeks. 250 mill. twice a week for a week, then 500 mill. twice a week.	Cured	General tonic treatment. Incision of larger boils and fomentation.
15/1583	Furunculosis	Pus from boil	*S. aureus*	*S. aureus*	Captain James, A.A.M.C. Liverpool (on Active Service).	No data obtainable		Reporter on Active Service.
15/1610	Furunculosis	Pus	*S. aureus*	*S. aureus*	Dr. G. H. Baring Deck	Six injections at intervals of fourteen days	Cured	No other treatment.
15/1802	Furunculosis	Pus	*S. aureus*	*S. aureus*	Captain Lalor	Course, four weeks. 250 mill. twice a week for a week; 500 mill. twice a week after.	Cured	General tonic treatment. Incision of larger boils and fomentation.
15/1946	Furunculosis	Pus	*S. aureus*	*S. aureus*	Dr. Jno. Campbell	Two injections of 500 mill.	Boils still present after two months.	
15/1974	Furunculosis	Pus	*S. aureus*	*S. aureus*	Captain Lalor	Course, four weeks. 250 mill. twice a week for one week, then 500 mill. twice a week for three weeks.	Cured	Genoral tonics. Incision of larger boils.
15/2075	Furunculosis	Pus	*S. aureus*	*S. aureus*	Dr. Binns			
15/2792	Furunculosis	Pus from boil	*S. aureus*	*S. aureus*	Dr. Lyons, Sydney Medical Mission.	Course, six weeks. Initial dose 250 mill., increased every week till 500 mill.	Cured	
15/2885	Furunculosis	Pus	*S. aureus*	*S. aureus*	Dr. J. J. O'Keefe	Course, three weeks	Rapid complete cure	
15/3024	Furunculosis	Pus	*S. aureus*	*S. aureus*	Coast Hospital	Vaccine was not given as condition healed quickly without.		

No.	Disease.	Specimen.	Organism found.	Organism from which vaccine was prepared.	Reporter	Course, Dosage, &c.	Result.	Notes.
15/3976	Furunculosis	Pus	*S. aureus*	*S. aureus*	Dr. P. L. Hipsley	Course, nine weeks. 250 mill. No other treatment.	Cured	
15/4190	Furunculosis	Pus	*S. aureus*	*S. aureus*	Dr. B. Hittmann	Course, thirty-four days. Five injections—500 mill. to 2,000 mill.	Successful. General health much improved.	Patient had suffered from boils for the past five years.
15/4527	Furunculosis	Pus	*S. aureus*	*S. aureus*	Dr. B. Hittmann	Course, twenty days. Three injections of 500 mill. to 1,500 mill.	Successful	Patient has had recurrent attacks at about six months' interval. Result cannot be really estimated till six months have passed.
15/4981	Furunculosis	Pus	*S. aureus*	*S. aureus*	Dr. J. S. Campbell	Course, four weeks. Five injections of 500 mill.	Cured	
15/5354	Furunculosis	Pus	*S. aureus*	*S. aureus*	Dr. Weedon	Course, two months. Ten injections—25 mill. to 500 mill.	Recovered. Condition recurred six months later.	
15/5859	Furunculosis and multiple suppurating folliculitis (scalp).	Culture from boil	*S. aureus*	*S. aureus*	Dr. Barrow, Nepean Cottage Hospital.	Course, about three weeks. 500 mill. given on three occasions. Hot fomentations and incisions.	Cured	Patient did not return for all injections, but lesions healed up nearly before leaving the institution.
15/5878	Furunculosis	Pus	(1) *S. aureus*	(1) *S. aureus*	Dr. J. S. Campbell	(1) Course, five weeks. Six injections of 500 mill.	Improved	Foments to affected parts.
			(2) *Streptococci* (three months later).	(2) *Streptococci*		(2) Course, five weeks. Seven injections of 100 mill.	Improved	
15/3117		Pus from boil	*S. albus*	*S. albus*	Dr. Sabiel, Medical Officer in Charge, Middle Head.			
15/723	Carbuncle	Pus	*S. aureus* and a few *S. albus*	*S. aureus*	Dr. Denniston	Course, two weeks. Daily injections—10–100 mill.	Cured	Foments and tonics.
15/877	Carbuncle	Pus	*S. aureus*	*S. aureus*	St. George Cottage Hospital.			
15/2809	Carbuncle	Pus	*S. aureus*; a few diphtheroids.	Mixed	Marrickville Hospital	Course, one month. 500 mill. Incision, scraping and dressing.	Cured	
15/2108	Carbuncle	Swab from boil	*S. aureus*	*S. aureus*	Dr. Blackall	Course, two weeks. 100 mill. to 500 mill. Antiseptic dressings and lotions employed locally.	Cured	
15/43 and 900	Extensive ulceration of left leg, secondary to severe burns.	Pus	*S. aureus*	*S. aureus*	Coast Hospital	Course, three months. 200 mill. given. Dose increased by 100 mill. each week until dose reached 700 mill. Foments, antiseptic washes and general treatment.	Improved	Patient discharged almost well, and able to follow occupation.
			Seven weeks later, *S. albus* and a few *S. aureus*.	*S. aureus*.				
15/1735	Recurrent abscesses	Pus	*S. aureus*	*S. aureus*	Dr. D. T. Harbison	Course, six weeks. 500 mill. (?). No other treatment.	Practically cured. Only slight recurrences.	
15/1684	Chronic axillary abscess	Pus	*S. aureus*	*S. aureus*	Dr. Denniston	Course, one month. 5 mill. to 20 mill. Bi-weekly fomentations.	Cured	
15/5109	Abscess of temporal region... Pyæmia.	Pus	*S. aureus*	*S. aureus*	Dr. E. A. Tivey, Wagga Hospital.	Course, four weeks. Initial dose, 50 mill., given every four days, and increased by 50 million at alternate doses. Other treatment—Incision and drainage, irrigation with hypertonic saline solutions.	Apparently unaffected. Patient died.	The inflammatory process had been extending before and continued after vaccine.
15/1005	Multiple abscesses	Pus	*S. aureus*	*S. aureus*	Dr. Weedon			
15/3283	Recurrent abscesses of perinæum.	Pus	*S. aureus*	*S. aureus*	Dr. G. H. B. Deek	Course, three weeks. An injection of 500 mill. given every ten days. Three injections.	Cured	No recurrence after first injection.
15/4446	Suppurating gland of axilla, following suppurating finger.	Pus	*Streptococci*	*Streptococci*	Tamworth Hospital	Course, seventeen days. Eight injections, beginning with 12 mill., and reaching to 100 mill.	Cured	
15/3397	Multiple scalp infection..... Necrosed bone of scalp.	Pus	*B. proteus*, gram positive coccl. (Two examinations.)	Mixed vaccine of *B. proteus* and gram positive cocci.	Dr. Manning, St. George Cottage Hospital.	Course, nearly three weeks. 500 mill. Initial dose, and same for five consecutive doses at four-days' interval. Iodides and mercury persistently.	Improved	Marked diminution of discharge and healing of wound, except for a few sinus wounds now almost quite healed.
15/2708	Facial dermatitis	Swab and culture	*S. aureus*	*S. aureus*	Rookwood State Hospital.	Patient died of chronic myocarditis before there was an opportunity of administering the vaccine		

Acne, Furunculosis, and Infective Conditions of the Skin and Subcutaneous Tissues—*continued.*

No.	Disease.	Specimen.	Organism found	Organism from which vaccine was prepared.	Reporter.	Course, Dosage, &c.	Result.	Notes.
15/3951	Pustular dermatitis	Pus	*Streptococci* and *S. aureus*; finally *S. aureus* alone.	*Streptococci* and *S. aureus*...	Dr. Ludowici	Under treatment on various occasions between August, 1914, and December, 1915. Injections twice weekly. No other treatment since inception of vaccine treatment. Over a number of years previously had had a great variety of treatment, including various external applications and salvarsan.	Cured	In the interval between supplies patient developed a few pustules, which quickly responded to vaccine.
15/1219	Hordeolum	Pus culture from sty...	*S. aureus*	*S. aureus*	Coast Hospital	Condition cleared up. Vaccine was not given	.....	
15/2212	.....	Fluid	*S. aureus*, coliform bacillus	*S. aureus*	Walsend Hospital	.....	.....	
15/1725	.....	Pus	*S. aureus*	*S. aureus*	Queanbeyan Hospital	.....	.....	
15/3392	.....	Swabbing	*S. aureus*, *B. proteus*, gram positive bacilli.	*S. aureus*	Dr. W. W. Martin	.....	.....	

Pyæmia, Deep Abscesses, Sinuses, &c.

15/3308	Pyæmia arising from osteomyelitis.	Pus	*S. aureus*; seven weeks later, *Streptococci*.	(1) *S. aureus* (2) *Streptococci*.	Dr. W. B. Korr	(1) Course, eight weeks. 500 mill. each dose at intervals of about ten days. (2) Course, three weeks. Three injections at intervals of ten days. 250 mill., 500, 500 mill. Patient developed gastritis and did not continue treatment.	(1) Slight improvement (2) Unimproved.	(2) This case was of long standing (some years), and long and continuous treatment would probably be required to improve. A fortnight after last injection a further abscess developed in abdominal wall, so case might be said to be at least unimproved by treatment.
15/4489	Pyæmia and syphilis	Pus	*Streptococci*	*Streptococci*	Newington Asylum	Course, seven days. Patient did not re-act when given vaccine, and died.	.....	
15/5768	Pyæmia	Pus	*S. albus*	*S. albus*	Wellington Hospital	Course, eight weeks. Four lots of vaccine of six injections each with week interval between courses. Incision. Usual treatment for septic cases synchronous with vaccine.	Recovered	The case is interesting in that no primary focus could be found. The abscesses were superficial and of considerable size, and deep-seated in the muscular layer.
15/130	Abscess in thigh	Pus	*S. aureus*	*S. aureus*	Dr. Guy Griffiths	Vaccine not used	.....	Tub. bac. not detected in pus. Pt. had pulmonary tuberculosis.
15/2219	Perirenal abscess	Pus	Coliform bacilli	Coliform bacilli	Dr. H. Leigh Deck	.....	.....	Tub. bac. not detected.
15/3864	Appendiceal abscess	Pus	(1) Coliform bacilli (2) *Streptococci*.	(1) Coliform bacilli (2) *Streptococci*.	Balmain Hospital	.....	.....	
15/4570	Suppurating gangrenous appendix.	Pus	(1) *S. albus* (2) *S. aureus*, coliform bacillus.	(1) *S. albus* (2) *S. aureus*.	Tamworth Hospital	(2) Course, eight days. Five injections. 60 mill. to 500 mill. at intervals of two days.	Unaffected	Operation fifteen days previously.
15/1402	Appendiceal wound	Pus	*Streptococci*	*Streptococci*	Dr. G. A. Paton	Two injections	Cured	The vaccine was very satisfactory and the discharge ceased after two injections.
15/4287	Abscesses in region of perineum.	Pus	*S. aureus*. A month later *S. albus* and a few *S. aureus*.	*S. aureus*	Dr. Wherrett, Marrickville Hospital.	Course, four to five weeks. 250 mill. first dose, 500 mill. second dose. Doses at five-seven days intervals.	Cured	No return since, although had been present off and on for two years. Platinoids ceredin before vaccine treatment without much result.
15/4833–5428	Suppurative periostitis of sternum, both tibiæ and right femur, thought to be tubercular.	Pus	*S. aureus*	*S. aureus*	Maitland Hospital	Course, two months. Other treatment—Opening various sites of infection, fresh air, &c.	A markedly successful result. Pus cleared up leaving great thickening of bone.	
15/5006	Ulcer on leg	Pus	*S. aureus*	*S. aureus*	Dr. Ludowici	Patient did not return for administration of vaccine.	.....	
15/1157	Wounds of leg	Pus	*S. aureus*	*S. aureus*	Coast Hospital	Course, two months. 50 mill. given and increased by 50 mill. weekly until last dose was 400 mill.	Gradual improvement	Drainage maintained surgically and sinuses curetted at intervals. Otherwise hygienic conditions resorted to. Sunlight and nourishment.

Pyæmia, Deep Abscesses, Sinuses, &c.—*continued.*

No.	Disease.	Specimen.	Organism found.	Organism from which vaccine was prepared.	Reporter	Course, Dosage, &c.	Result.	Notes.
15/3628	Hip wound, (?) hydatid of right femur.	Pus	*Streptococci*	*Streptococci*	Coast Hospital	Course, two months. 50 mill. given. Dose increased by 50 mill. every seven days. Last dose was 500 mill. Other treatment—general drainage, tonics.	Improved	
15/3143	Pott's Disease	Pus	*Streptococci*	*Streptococci*	Coast Hospital	Course, three months. Nine injections from 10 mill. to 50 mill. Other treatment—iron, cod liver oil.	No improvement	Disease of some years' duration.
15/5389	Sinus from vertebra	Swabbing	Diphtheroid; later *S. aureus*	*S. aureus*	Dr. Sinclair	Vaccine not used		
15/6008	Purulent arthritis of shoulder joint following scarlet fever.	Pus from shoulder	Gram negative cocci	Gram negative cocci	Coast Hospital	Course, five weeks. 100 mill. increasing to 600 mill. Foments to painful joint. Diaphoretics and stimulation as was necessary.	Improved	Severe case of scarlet fever. At end of fourth week developed pus in right shoulder joint. This was drained surgically. Improvement under vaccine treatment showed after three weeks.
15/1305	Acute synovitis of knee	Fluid	*Streptococci*	*Streptococci*	Dr. S. Douglas	Course, three weeks. Seven injections, commencing with 25 mill. and increased to 100 mill. (four injections of 100 mill.). Other treatment—operation and free drainage.	Cured	
15/5168	Tertiary syphilis—Charcot joint with streptococcal infection.	Fluid	*Streptococci*	*Streptococci*	Dr. L. L. Snow, Wellington Hospital.	Data unavailable. Knee and leg opened and drained and subsequently amputated.		Patient died of general septicæmia. Had had other leg amputated some years previously for same condition.
15/2906	Abrasion of skin	Swab from knee	*Streptococci* and a few *S. albus.*	Mixed *Streptococcal* and staphylococcal.	Dr. Stephens	Vaccine not used		Abrasion accompanied with fever and swollen glands in groin; later sent to Coast Hospital as scarlet fever.
15/5470	Suppuration of knee	Pus from knee	*S. aureus*	*S. aureus*	Dr. Blackall	Course, two weeks. 100 mill. to 500 mill. Drainage of knee.	Cured	
15/2928	Suppurating wound of knee joint.	Pus from knee	*Streptococci*	*Streptococci*	Parramatta Hospital	Course, three weeks. 100 mill. every five days. Other treatment, 1 oz. ether injected into joint, and repeated two days later. Splint and extension on foot; massage; Scott's dressing.	Rapid improvement	Able to walk at end of six weeks.
13/4580	Necrosis of upper part of femur, with sinus.	Pus from sinus	*Streptococcus* and diphtheroid	Mixed vaccine		Vaccine supplied January and February, 1913	Responded satisfactorily to vaccine. Pus reaccumulated on cessation of this treatment.	
		Pus from sinus	*S. aureus* and diphtheroid	*S. aureus* and diphtheroid	Dr. R. A. P. Waugh, Parramatta Hospital.	Course, six months	Much improved	Very much improved and will, I think, be cured.
						Vaccine supplied December 1, 1913		Other treatment, scraping sinus six months ago.
15/58		Swabbing from sinus	*S. aureus*	*S. aureus*		In all, off and on for two years. Vaccine supplied 6–1–1915.	Much improved	Patient is much improved from the first condition, but latterly she has not made much progress. I have told her that I want her to continue treatment for another few months, as her general condition has so much improved.
		Pus	*S. aureus*	*S. aureus*	Dr. Whiting, Parramatta Hospital.	About six weeks. First dose 160 mill., increased by 30 mill. each week up to 500 mill. Vaccine supplied 14–9–1915.	Unaffected	Sinus of hip due to piece of dead bone in great trochanter.
15/5297	Sinuses of left groin and right iliac region, probably due to caries of spine.	Pus	*S. aureus*, *S. albus*, and *Streptococcus.*	(1) Mixed *S. aureus* and *S. albus.* (2) *Streptococcus.*	Dr. G. A. Paton	Course, two months. Injections at intervals of seven days, the vaccines given alternately, beginning with 200 mill. of former and reaching 350 mill., and 40 mill. of latter reaching 60 mill.	Great relief from pain. No difference in discharge.	
15/5417	Discharging sinus with dislocation of hip (? tuberculosis of hip-joint).	Pus	*S. aureus*	*S. aureus*	Coast Hospital	Course, three months. 50 mill. repeated every four days. General drainage of joint, tonics, fresh air, diet.	No improvement	Sinuses still discharging freely, and condition of patient much about same as on admission.
15/5228	Tubercular sinus of hip-joint (old).	Pus	Diphtheroid	Diphtheroid	Coast Hospital	Course, three months. 50 mill. given and repeated every second day for a fortnight; dose then given every fourth day. Drainage, tonics, fresh air, general treatment, cod liver oil.	No improvement	

Pyæmia, Deep Abscesses, Sinuses, &c.—*continued.*

No.	Disease.	Specimen.	Organism found.	Organism from which vaccine was prepared.	Reporter.	Course, Dosage, &c.	Result.	Notes
15/3756	Sinus of groin from dead bone in os innominatum (tubercular).	Pus	Coliform bacillus, and a few *S. aureus*.	Coliform bacillus	Kurri Kurri Hospital	Vaccine not used		
15/4588	Osteo-myelitis	Pus	*S. albus*, and a fine growth of gram positive oval cocci.	Gram positive oval cocci	Dr. G. A. Paton	Course, seven weeks. Began with 60 mill. and increased to 90 mill. at intervals of four days.	No improvement	Free incision and drilling of bone. Patient has had 25 operations, and is decidedly neurotic.
15/2973	Osteo-periostitis of tibia	Pus	(1) *S. aureus* (2) *Streptococcus.*	(1) *S. aureus* (2) *Streptococcus.*	Dr. Crookston	Course, eight weeks. *S. aureus* vaccine gradually increased from 150 mill. to 500 mill. at intervals of three to four days. Streptococcal vaccine increased from 50 to 100 mill. at intervals of four days — five injections.	Cured. Condition cleared up completely	Vaccine treatment preceded by operative measures, resulting in a chronic ulcer which would not heal. This was a case of long standing (about four years) and all previous treatment in various places had proved useless.
15/4676	Acute osteo-myelitis of femur, with septicæmia and pyæmic abscesses in the bones.	Pus	*S. aureus*	*S. aureus*	Cessnock Hospital	Course, eighteen days. Four injections—250 mill., 500 mill., 750 mill., 750 mill.	Improved	Abscesses opened and drained, continuous drip salines through sinuses, and ether dressing.
15/1393	Sinus of leg	Pus	*B. pyocyaneus*	*B. pyocyaneus*	Dr. K. Harvey Grieve, Goulburn Hospital.	No data obtainable. Reporter on Active Service.		
15/542	Septic leg		*S. aureus; B. proteus*	Mixed *S. aureus* and *B. proteus.*	Balmain Hospital.			
15/1878	Septic leg from sloughing of superficial tissues.	Pus	*Streptococcus* and *S. albus*	*Streptococcus*	Dr. O'Keefe, St. George Cottage Hospital.	Course, two months. Patient died	No apparent effect	
15/594	Sinus under left eye from caries of orbital cavity.	Pus	*S. aureus*	*S. aureus*	Coast Hospital	Injection every tenth day	Definitely cleared up	
15/1007	Sinus from empyema	Pus from sinus	*S. aureus* on three occasions.	*S. aureus*	Coast Hospital	Course, about six weeks. Initial injection of 50 mill., increased each injection till 500 mill. were given. Seven injections.	Condition cleared up slightly.	
15/5522	Osteo-myelitis of tibia	Pus from tibia	*Staphylococcus*	*Staphylococcus*	Marrickville Cottage Hospital.	Course, one month. 500 mill. to begin with on alternate days. Improved during treatment, but fresh foci of pus developed which have been opened. Knee joint has become infected and has been opened and drained.	Improved	
15/2013	Sinus of neck from suppurating tubercular glands.	Pus	*Streptococcus*	*Streptococcus*	Dr. Crookston	Course, eighty days. First series, 30 to 50 mill. at intervals of four to five days (four injections). Second series, progressing to 85 mill. at intervals of eight to ten days (four injections). Third series, 100 mill. at intervals of twelve to fifteen days (two injections).	Considerable improvement. Marked improvement—almost healed. Slight swelling left, with occasional bead of pus and some serous discharge.	Previous treatment with *S. albus* vaccine had given great improvement. Previous to vaccine treatment every available surgical treatment adopted.

Infections of the Mouth, Nose, Eye, Ears, and Brain.

15/1583	Pyorrhœa	Pus from mouth	Gram positive cocci (? *S. albus*); gram positive bacilli (? diphtheroids).	Mixed vaccine	Laboratory	Course, one month. Four injections, about 100 mill.	Mucn improved	
15/1490	Osteo-arthritis	Pus swab	Streptococcus; also some *S. aureus* and *S. albus*.	*Streptococcus*	Dr. Percy M. Wood	Six ampoules used. Injections every few days.	No improvement	Treatment was stopped owing to the difficulty of getting to her home which was some distance and to the fact that she soon lost energy enough to continue.
15/910	Osteo-arthritis	Pus from gums	Gram positive streptococci; gram negative cocci; gram negative bacilli, &c.—varying in different examinations.	Mixed vaccines	Dr. Percy M. Wood	Course, three months	No improvement	
15/2302	Rheumatoid arthritis	Pus from stump of tooth.	*Streptococci*	*Streptococci*	Dr. Percy Wood	100 mill. was given every five days (thirty injections). Removal of stump.	Slight improvement. Seems better than she has been for years.	Rheumatic phylacogens previously unsuccessful.
15/5020	Rheumatoid arthritis and pyorrhœa.	Culture from gums	Diphtherold and gram positive coccus	Diphtherold	Coast Hospital	Course, four months. Initial dose 10 mill., gradually increased by 10 mill. Last dose, 190 mill. General tonic treatment, &c.	Unimproveo	Almost every joint now affected. Much deformity. Patient helpless.

Infections of the Mouth, Nose, Eye, Ears, and Brain—*continued.*

No.	Disease.	Specimen.	Organism found.	Organism from which vaccine was prepared.	Reporter.	Course, Dosage, &c.	Result.	Notes.
15/1705	Infected dentigerous cyst ...	Pus from jaw	Diphtheroid	Diphtheroid	Dr. Mason.....	Course, about six weeks. Initial dose 50 mill.; increased to 100 mill. Weekly injections. Local treatment.	Much improved. Sequestrum separated a month later.	After each injection a local reaction, which materially hastened final resolution and cutting off of fragment of maxilla.
15/6017	Recurrent chronic ulcers of mouth, tongue and gums.	Culture from ulcer of tongue.	Gram positive cocci; gram negative cocci; grum positive bacilli; *Streptococci*. *Streptococci* usually numerous.	Mixed vaccine (three occasions).	Dr. Isbister	Course, several months. 500 mill. Pot. iodide and mercury did no good.	Much improved.....	Amœbæ present. Ulcers of unknown origin (twelve years). May come anywhere on tongue, lips, cheek, &c. Size of pin's head to half size of three-penny piece. Patient has had two vaccines and is now using a third. The vaccines have apparently had good effect.
15/3029	Chronic ulcerative stomatitis.	Material from ulcers on tongue and lip.	Large gram positive cocci; later, *Streptococci* and gram negative cocci; later, *Streptococci*.	Large gram positive cocci; mixed vaccine: *Streptococci*.	Dr. O'Keefe	Course, six weeks	Marked improvement....	Not absolute cure.
15/5255	Recurrent peritonsillar abscess.	Swabbing from peritonsillar abscess.	Diphtheroid; yeast.....	Diphtheroid	Dr. Harbison	Course, four weeks. Ten doses of 100 mill. No other treatment.	Improved	No recurrence so far. It is yet too early to give information as to cure.
15/4544	Secondary syphilis with bacterial infection of tonsils.	Culture from throat...	Streptococcus; pneumococcus; gram negative coccus.	Mixed vaccine	Dr. J. T. Paton.....	Course, two weeks. 5 mill. and 10 mill. at four days' interval. Iodoform locally.	Improved	Some definite improvement, but it is doubtful if because of vaccine.
15/4848	Scarlet fever with prolonged joint pains and toxic myocarditis.	Swabbing from throat	Yeasts; gram positive cocci, probably streptococci.	Gram positive cocci	Dr. Metcalfe, Wellington Hospital.	Joint pains relieved by vaccine	.....	
15/5246	.....	Swabbing from throat and nose.	*S. aureus*	*S. aureus*	Garrison Hospital	.....	.....	
15/906	Diphtheria (carrier stage) ...	Serum culture from throat.	Diphtheria bacillus (non-toxic).	Diphtheria bacillus	Coast Hospital	Course, five weeks. 25, 50, 75 and 100 mill. at intervals of ten days.	.....	Patient left hospital and was to continue treatment, but has ceased calling.
15/905	Diphtheria (carrier stage) ...	Serum culture from throat.	Diphtheria bacillus	Diphtheria bacillus	Coast Hospital	Vaccine not given.....	.....	
15/904	Diphtheria (carrier stage) ...	Serum culture from throat.	Diphtheria bacilli.....	Diphtheria bacilli.....	Coast Hospital	Course, three weeks. Three injections, 25, 50, 75 mill. Diphtheria antitoxin. Throat paints and gargles, tonics.	Throat recorded free from infection three days after end of vaccine treatment.	
15/2535	Corneal ulcer and hypopyon	Cultures and swabbing from eye.	*S. aureus; S. albus;* gram positive diplococcus.	(1) Mixed staphylococci ..... (2) Diplococcus.....	Dr. H. Allen ..... Dr. E. Lloyd Parry.	.....	.....	
15/326	Suppuration of ear, following pneumonia and influenza.	Swabbing from ear ...	*S. aureus* ..... *Streptococcus.*	(1) *S. aureus*..... (2) *Streptococcus.*	Dr. P. Blackall	Course, three weeks. 20 mill to 100 mill. Tonics.	Cured.....	
15/2162	.....	Swabbing from ear ...	Gram negative cocobacillus; also *S. aureus* and *albus.*	Gram negative cocobacillus..	Balmain Hospital	.....	.....	
15/3962	Otitis media following scarlet fever with arthritis.	Pus from ear.....	*S. aureus*	*S. aureus*	Wagga Hospital	.....	.....	
15/3309	Meningitis, following fracture of skull three months before.	Cerebro-spinal fluid...	*S. aureus*	*S. aureus*	Dr. W. B. Kerr	Patient died before vaccine could be used ...	.....	

Infections of the Urinary Tract.

15/121	Pyelitis following confinement.	Urine.....	Coliform	Coliform	Dr. H. C. Adams.....	Course, one month. From 85 mill. to 200 mill., at intervals of five days. Pot. cit. and helmitol synchronous with vaccine.	Complete recovery.....	
15/5424	Pyelo-nephritis and cystitis after confinement.	Urine.....	Coliform	Coliform	Dr. N. Dowling	Course, about seven weeks. Two injections of 10 mill. at intervals of four days. Four subsequent injections at intervals of ten days, each injection increased by 10 mill. Hexamine.	General health much improved. Still a little pus in urine at times.	
15/5563	Pyelitis of pregnancy.....	Urine.....	Coliform	Coliform	Dr. Buckley, Tamworth Hospital.	Course, one week. Four injections, 60 mill., 120 mill., 320 mill., 500 mill. Sod. bi-carb and bladder washed out.	Cured.....	
15/5995	Pyelitis of pregnancy.....	Urine.....	Coliform ..... Gram positive oval cocci.	(1) Coliform ..... (2) Cocci.	Dr. S. Douglas, Tamworth Hospital.	Course, three weeks. Coliform vaccine only used. Six injections, 125 mill. to 500 mill Pot. cit. and bladder washed out.	Cured.....	

No.	Disease.	Specimen.	Organism found.	Organism from which vaccine was prepared.	Reporter.	Course, Dosage, &c.	Result.	Notes.
15/51	Pyelitis of pregnancy	Urine	Coliform	Coliform	Dr. Hilton Smith	Six injections given, 100 mill. to 500 mill.	Cured	Vaccine treatment commenced in puerperium.
15/1629	Bacilluria of early pregnancy	Urine	Coliform	Coliform	Dr. M. Archdall	Six injections—100 mill., 250 mill., 500 mill. Rest in bed, urinary antiseptics.	Improved	
15/2785	Coliform infection of urinary tract in pregnancy.	Urine	Coliform	Coliform	Dr. C. Stewart	Course, three weeks. Two injections weekly, commencing with 200 mill., increased by 50 mill. each dose.	Unaffected	
15/4850	Pyelitis of pregnancy	Urine	Coliform	Coliform	Dr. H. Weedon	.....	.....	
15/4857	Pyelitis of pregnancy	Urine	Coliform	Coliform	Dr. Moffitt, Tamworth Hospital.	Course, twelve days. Six injections—125 mill. to 500 mill. Sodii bi-carb.	Cured	
15/4590	Toxæmia of pregnancy	Urine	Coliform	Coliform	Tamworth Hospital	Course, thirteen days. Seven injections—125 mill. to 750 mill. Pot. cit. and sodii bicarb. first, later urotropine and acid sod. phosph.	Improved	
15/4889	Toxæmia of pregnancy	Urine	Coliform	Coliform	Dr. Moffitt, Tamworth Hospital.	Course, nine days. Five injections—250 mill. to 500 mill.	Cured	
15/6061	Phlebitis in right leg after parturition. Later, urinary symptoms with pus and evidence of pyæmia.	Urine	Coliform	Coliform	Dr. M. Barrow	Vaccine not used	.....	Cultures from blood sterile early in case before urinary symptoms developed.
15/2150	Bacilluria. (Infection of urinary tract of long standing—many years—consequent on parturition. Catheterism.)	Urine	Coliform (two occasions)	Coliform	Dr. G. L. O'Neil	Course, three months. 100 mill. increased to 500 mill. Urotropin synchronously with vaccine treatment.	Much improved	All urgent symptoms removed, but coliform bacilli still present. Thinks that benefit was derived from use of vaccine, as patient had taken urotropin at other times without benefit. Vaccine treatment was not continued for an adequate period of time.
15/512	Pyelitis	Urine	Coliform and *B. proteus*. Later, coliform only.	Coliform	Tamworth Hospital	Course, one week. Five injections—125 mill. to 500 mill. Sod. bicarb. and salol, &c.	Improved	
15/1555	Pyelitis	Urine	Gram poor coccus	Gram poor coccus	Dr. Hilton Smith	Course, about four weeks. From 85 mill. to 500 mill. at intervals of four days. Citrates.	Disappearance of symptoms.	
15/3065	Pyelitis	Urine	*B. proteus* (on three occasions followed by two sterile urines).	*B. proteus*	Dr. Sholto Douglas	Course, one month. Injections made at intervals of two to four days. 65 mill. increasing to 330 mill., at 48-hour intervals on four occasions; subsequent doses 500 mill.	Cured (temporarily)	Other treatment—medicine, pot. cit. practically given all the time.
15/4016	Pyelitis	Urine	Coliform bacillus. Later *S. albus* on three occasions. Then sterile on three occasions.	*S. albus*	Marrickville Cottage Hospital.	Course, about three weeks. 250 mill. first dose, 500 mill. second dose. Doses at 5-7 days' intervals. Rest in bed, light diet, &c.	Cured	No albumen or pus. Frequency of micturition.
15/5133	Pyelitis	Urine	Coliform	Coliform	Dr. R. B. Trindall	Course, two months. 250 mill., successive doses of 500 mill. about every ten days. Other treatment—Irrigation of bladder, Urotropine.	Cured	Pus cells present.
15/457	Coliform pyelitis	Urine	Coliform and *B. proteus* (two occasions).	Mixed vaccine of coliform and *B. proteus*.	Dr. Vickers	No data obtainable. Reporter on Active Service.	.....	
15/1956	Pyelitis	Urine	*B. proteus*	*B. proteus*	Dr. S. Douglas, Tamworth Hospital.	Vaccine not given	.....	
15/2610	Pyelitis	Urine	*Streptococcus*; later, *B. pyocyaneus* and *Streptococcus*.	*Streptococcus*	Dr. D. T. Harbison	Course, six weeks. 100 mill. Urotropin	Improved	
15/322	Pyelitis, coliform infection	Urine	Coliform	Coliform	Dr. Margaret Harper	Vaccine treatment was not administered	.....	Baby, one year old, had rickets. Also frequency of micturition and restlessness.
15/5874	Coliform nephritis	Urine	Coliform. Some gram positive bacilli, gram positive oval cocci and cocci in short chains also present.	Coliform	Dr. H. R. Letcher	Course, four weeks. 100 mill. increased to 200 mill. at third injection and given every second day for a fortnight. Then 300 mill. every two days for a week. Then two injections of 200 mill. at intervals of two days.	Improved (coliform bacilli still present).	Urine quite clear with slight mucous deposit. Stock B.C.C. vaccine previous to autogenous vaccine, with little or no improvement. Pot. cit. (grains xv) every four hours.
15/5287	*Ascari lumbricoides* and Pyelitis.	Urine	*Streptococcus*	*Streptococcus*	Wollongong Hospital	Course, three weeks. Started with 25 mill. and increased by 25 mill. every third day. Other treatment, santonin.	No sign of any organisms after a fortnight or in two months.	The patient (child about 4 years) has passed over 100 *Ascaris lumbricoides* in the last six months. There were irregular rises of temperature, with pain in loins and pus in urine.

No.	Disease.	Specimen.	Organism found.	Organism from which vaccine was prepared.	Reporter.	Course, Dosage, &c.	Result.	Notes.
15/61	Pyelitis from renal calculus	Urine	*S. albus*	*S. albus*	Dr. Keith Whiting	Course, six weeks. 125 mill. increased by 60 mill. each dose with increasing intervals between doses. Minimum interval three days, maximum ten days.	Unaffected	Several operations for removal of stones. Tubercle bacilli not detected.
15/5766	Pyelo-cystitis, following scarlet fever.	Urine	Coliform	Coliform	Dr. Hilton Smith	Course, five days. 30 mill., repeated five days later. No further doses given. Other treatment—full doses of citrates.	Symptoms cleared up	Child, 2½ years.
15/4191	Pyonephritis	Urine	Coliform and *B. proteus*; later, coliform, *B. proteus* and streptococci; then coliform only; later, coliform and streptococci; later, coliform bacilli only.	Mixed coliform, *B. proteus* and streptococci; coliform; coliform vaccine and streptococcal vaccine; coliform.	Dr. E. K. Herring	Course, about seven months. Coliform and mixed vaccines, 500 mill. at weekly intervals, periodically; 100 mill. streptococcal vaccine at intervals of four days for six doses; urotropin, &c.	Improved. Coliform bacilli still present.	Pus cells present.
15/4136	Suppurative inflammation of left kidney.	Urine	Coliform	Coliform	Dr. W. J. White, St. George Cottage Hospital.	Course, ten days. 500 mill. Pot. cit. and buchu mixture and milk foods, coincident with vaccine treatment.	Cured	
15/259	Renal infection	Urine	*Streptococcus*; *S. aureus* and coliform.	*Streptococcus*	Dr. J. W. Harbison	Course, one month. 6 mill. to 66 mill.	Improved	Operated on three times in thirteen years for stone in kidney.
15/4428	Tubercular kidney	Urine	*S. aureus*	*S. aureus*	Dr. F. H. B. Galen	Two injections of 100 mill. and 300 mill., six days' interval.	Patient died	One kidney had been removed for tubercular disease eight years ago. Remaining kidney was much enlarged, with much pus in urine.
15/1820	Infection of kidney	Urine	Coliform	Coliform	Sydney Medical Mission	Course, six weeks. Initial dose 25 mill., and increased by 5 mill. every time.	Improved	
15/2900	Coliform infection of urinary tract.	Urine	Coliform	Coliform	Dr. R. Scott Good	Course, about six weeks. 55 mill., 100 mill., 160 mill., and 250 mill. at intervals of seven days. 350 mill. and 400 mill. at intervals of ten days.	Very satisfactory. Urine not offensive. No deposit of pus.	Previous to vaccine treatment and for first fortnight of treatment, patient had urotropin, also bladder irrigation.
15/3608	Coliform infection of urinary tract.	Urine	Coliform	Coliform	St. George Cottage Hospital.	Course, six weeks	Recovery	
15/3609	Coliform infection of kidney(?)	Urine	Coliform	Coliform	St. George Cottage Hospital.	.....	.....	
15/41	Coliform infection of urinary tract.	Urine	Coliform	Coliform	Dr. Denniston	Course, six weeks. 50 mill. to 1,000 mill. twice a week. Other treatment—Dimethyl hexamine, pot. cit., &c.	Cure as far as can be seen at present.	
15/4666	Coliform infection of bladder	Urine	Coliform (two occasions)	Coliform	Dr. E. A. Wherrett	Course, four-five weeks. 250 mill. first dose, 500 mill. second dose. Twice a week. Pot. cit. mixture before and during vaccine treatment without much relief.	Cured	Frequency and pain.
15/4769	Chronic cystitis	Urine	Coliform	Coliform	Dr. D. Christie	Course, about six weeks. 100 mill. gradually increased to 500 mill.	Much improved. Coliform bacilli disappeared, but reappeared again later.	No other treatment.
15/274	Cystitis	Urine	Coliform	Coliform	Coast Hospital	Course, three months. 25 mill. increased weekly by 50 mill. until dose was 350 mill. General treatment.	Improved. Frequency lost and much more comfortable.	Frequency and dysuria.
15/2303	Cystitis	Urine	Coliform (three occasions)	Coliform	Dr. Hipsley	Course, about four months. 500 mill. weekly. Urotropine, &c.	No improvement	
15/4920	Coliform infection of bladder	Urine	Fluorescent gram negative bacillus.	Fluorescent gram negative bacillus.	Dr. E. A. Wherrett	Course, six-seven weeks. 250 mill. first dose. 500 mill. second dose. Twice a week. Pot. cit. with hyoscy. and buchu before and during treatment; not much relief obtained.	Cured. Urine free from bacilli.	Frequency and pain at neck of bladder. Patient felt better than he had done for months.
15/5500	Chronic cystitis	Urine	*S. aureus* and *S. albus*	*S. aureus*	Dr. P. Sydney Jones	Course, six weeks. 500 mill. repeated weekly Drugs—Hexamin and ac. boracic, before and after vaccine treatment.	Unaffected	
15/5487	Cystitis following prostatectomy.	Urine	*B. proteus*	*B. proteus*	Dr. M. Archdall	Six doses, 50 mill., 100 mill., 250 mill., 500 mill., 500 mill., 500 mill. Other treatment. (*a*) Hexamin and ammon. benzo., &c. (*b*) rest in bed.	Improved	If the patient had been content to continue the treatment, better results would have been obtained.
15/2032	Pyuria	Urine	Coliform	Coliform	Sydney Medical Mission	Course, twelve weeks. Initial dose 250 mill., increased by one-tenth each week till it reached 500 mill.	Very much improved	

Infections of the Urinary Tract—*continued.*

No.	Disease.	Specimen.	Organism found.	Organism from which vaccine was prepared.	Reporter.	Course, Dosage, &c.	Result.	Notes.
15/2682	Pyuria	Urine	Coliform (several occasions)	Coliform	Dr. Lyons, Sydney Medical Mission.	Course, eighteen weeks. Initial dose 250 mill. increased by one-tenth every week till it reached 500 mill.	Cured	As far as symptoms concerned cured, but *B.C.C.* still present in large quantities by microbiological examination.
15/3985	Pyuria	Urine	Coliform (several occasions)	Coliform	Sydney Medical Mission	Course, twelve weeks. Initial dose 250 mill., increased by one-tenth every week till reached 500 mill.	Cured	
15/4973 15/5873 16/2584	Pyuria	Urine	Coliform	Coliform	Dr. E. K. Herring	Course, six months, and still under treatment. Other treatment—Urinary antiseptics tried from time to time.	The vaccine apparently had a definite effect in modifying the trouble.	
15/5550	Pyuria	Urine	Coliform of two types	Mixed Coliform	Sydney Medical Mission	One injection of 25 mill. Sodii bicarb. gr. 2½ every two hours, both before, with, and after vaccine.	Improved	Boy, 19 months old.
15/2017	Bacilluria with urethral discharge (? pyelitis).	Urine	Coliform (on three occasions, urine sterile on fourth occasion).	Coliform	Dr. M. Archdall	Course, about seven weeks. Initial dose 100 mill., then 250 mill. (reaction), 200 mill., 300 mill., 500 mill., and seven more doses of 500 mill.	Apparent cure	Pus cells present. Other treatment—A week in bed, urotropine and benzoate of ammonia by mouth. Patient had a history of trouble for about eight years, and had been treated for gonorrhœa, which he denied. He was a labourer and could not work. At present he feels quite well, and has gone back to work again.
15/6049	Bacilluria	Urine	Coliform	Coliform	Dr. Buckley	Course, nine days. Five injections. Initial one 65 mill., then 120 mill., 200 mill., 350 mill. at two-day intervals.	Cured	No temperature, slight redness around injection. Headache after last two doses. Salol. Operated upon for a twisted ovarian cyst.
15/5461	Bacilluria	Urine	Fluorescent non-liquefying gram negative bacillus.	Gram negative bacillus	Dr. Blaxland, German Concentration Camp.	Course, eighteen days. Five injections, 60 mill., 120 mill., 175 mill. (three doses). Pot. cit. with buchu, later urotropin; milk diet, &c.—synchronous with vaccine administration.	Cured	"My impression at the time was that the illness was running its course and that the vaccine did not make any difference to the result." . . . . The patient after each dose in, say, twelve hours certainly felt better, even if his temperature was raised.
15/2739	Condition resembling erythema nodosum without fever, and with nodules persisting, resisting salicylates.	Urine	Coliform	Coliform	Dr. Appleyard	Course, twenty-six days. 250 mill. for two doses, seven days apart. 500 mill. after seven days, thereafter 500 mill. every four days for three doses.	Cured	Pus cells present. General tonics and salicylates prior to vaccine.
15/3093	Hæmaturia. Cause (obscure)	Urine	Coliform	Coliform	Dr. J. E. Ellis, Manilla Hospital.	Course, about one month. No other treatment.	Relieved	
15/881		Urine	Coliform. Gram positive cocci	Coliform	Dr. Martin			
15/1692		Urine	Coliform	Coliform	Balmain Hospital			
15/1715		Urine	Coliform	Coliform	Dr. J. A. Dick	No data available. Reporter on Active Service.		
15/1958		Urine	Coliform	Coliform	Tamworth Hospital	No data available. Reporter on Active Service.		
15/2084		Urine	Coliform	Coliform	Dr. E. H. Rutledge			
15/2559*		Urine	Coliform. Gram positive diplococcus.	Coliform	Balmain Hospital			Tubercle bacilli not detected.
15/2559†		Urine	Coliform. Gram positive diplococcus.	Coliform	Balmain Hospital			
15/2767		Urine	Coliform	Coliform	Balmain Hospital			
15/3488		Urine	*S. albus* and a few *S. aureus*	*S. albus*	Dr. G. K. Smith			
15/5987		Urine	Coliform	Coliform	Dr. W. Seldon, St. George Cottage Hospital.			
15/2324		Urine	Coliform (two types)	Coliform (mixed)	Dr. MacArthur, Cessnock Hospital.			Pus cells present.
15/4270		Urine	*S. albus*	*S. albus*	Dr. W. W. Martin			
15/5601		Urine	Coliform	Coliform	Dr. G. K. Smith			
15/321		Urine	Streptococcus	Streptococcus	St. George Cottage Hospital			

* Mrs. Christianson. † Mrs. Phillips.

Infections of the Blood.

No.	Disease.	Specimen.	Organism found.	Organism from which vaccine was prepared	Reporter.	Course, Dosage, &c.	Result.	Notes.
15/1411	Septic endocarditis, recurring in an old rheumatic case.	Broth blood culture...	*S. aureus* (pale form)	*S. aureus*	Dr. Martin	.....	.....	
15/434	Streptococcal septicæmia, following on scarlet fever.	Broth blood culture...	*Streptococcus*	*Streptococcus*	Coast Hospital	Only one dose given—10 mill. Child moribund.	Patient (child) died.....	
15/1178	Puerperal septicæmia	Broth blood culture...	*Streptococcus*	*Streptococcus*	Dr. W. D. Langton.....	Course, three days	Patient died	
15/2163	Puerperal septicæmia, phlegmasia alba dolens and portal pyæmia.	Broth blood culture...	*Streptococcus* and gram negative coccus.	*Streptococcus*	Dr. C. H. Scott	Vaccine not used. Patient died before receipt of vaccine. Phylacogens given.	.....	
15/4710	Puerperal septicæmia.....	Aqueous solution of blood.	*S. aureus*	*S. aureus*	Dr. J. S. Davis	Course, eleven days. First injection, 100 mill.; third day 150 mill.; seventh day 500 mill.; eleventh day, 500 mill.	Unaffected, natural improvement having set in.	On day of first injection (previous to dose) the temperature fell to normal, and remained absolutely normal subsequently. Only slight local reaction to vaccine each dose.
15/5218	Puerperal septicæmia	Broth blood culture...	*S. aureus*; also gram negative streptobacilli and short gram positive bacilli, probably contaminations.	*S. aureus*	Orange Hospital	Course, seventeen days. Initial dose, 20 mill.. increased gradually to 750 mill., and decreased daily to 250 mill. Stock antistreptococcal serum and phylacogens used. Uterus explored and douched, &c.	Patient died from exhaustion. Vaccine apparently controlled rigors, but not T.	

Infections of the Uterus.

No.	Disease.	Specimen.	Organism found.	Organism from which vaccine was prepared	Reporter.	Course, Dosage, &c.	Result.	Notes.
15/1585	Puerperal septicæmia	Uterine swab of lochial discharge.	*Streptococcus, B. proteus*; gram positive bacilli and gram negative cocci.	Mixed vaccine	Dr. W. B. Kerr	Vaccine was not used as patient had improved apparently as result of use of antistreptococcal serum.	.....	
15/1914	Post-partum morbidity, pre-partum eclampsia.	Uterine discharge.....	*Streptococcus*	*Streptococcus*	Dr. S. Hertford Weedon...	.....	.....	
15/4395	Septicæmia following septic abortion.	Swabbing from uterus	*S. aureus* and *Streptococcus*...	*Streptococcus*	Dr. Hilton Smith.....	Four injections of 100 mill. each given at intervals of three days. Other treatment—Antistreptococcic serum, two doses of 10 c.c. each before vaccine. Quinine.	Recovered.....	
15/4469	.....	Uterine swab	*Streptococcus*	*Streptococcus*	Balmain Hospital	.....	.....	
15/4135	Abscess of broad ligament...	Pus	*Streptococcus*	*Streptococcus*	Dr. S. Snow	Course, four weeks. Two injections of 50 mill., three injections of 100 mill. Other treatment—diaphoretic mixture. Removal of pyosalpinx by operation.	Cured.....	

Infections of the Intestinal Tract.

No.	Disease.	Specimen.	Organism found.	Organism from which vaccine was prepared	Reporter.	Course, Dosage, &c.	Result.	Notes.
15/3992	Colitis.	Fæces	Morgan's No. 1.....	Morgan's No. 1.....	Dr. F. G. N. Stephens.....	Two injections, 5 mill. and 8 mill. Further injections refused.	Improvement definite...	Child of 2 years. Previous history of three weeks illness suggesting a mild typhoid in some ways.

Infections of the Urethra and Vagina.

No.	Disease.	Specimen.	Organism found.	Organism from which vaccine was prepared	Reporter.	Course, Dosage, &c.	Result.	Notes.
15/89	Intractable urethral discharge.	Urethral smears and cultures.	*S. aureus, S. albus, Streptococci.*	Mixed vaccine	Dr. Keith Smith	.....	.....	
15/2323	Urethral discharge.....	Urethral discharge ...	Gram negative diplococci; diphtheroids.	Diphtheroids	Dr. Keith Smith	.....	.....	
15/2660	Chronic gonorrhœa, with epididymitis and secondary infection of posterior urethra.	Urethral discharge.....	*S. albus*; diphtheroid.....	(1) *S. albus*; (2) diphtheroid.	Dr. Crookston	Course, seven weeks. 250 mill. (No. 1 vaccine); five days later 50 mill. (No. 2); subsequent doses (mixed) up to 250 mill. (No. 1) and 100 mill. (No. 2 vaccine). Local treatment.	Improved. Discharge much less and more mucous. Completed cure not obtained by vaccine. Epididymis not enlarged or tender.	Gonococci present in smears originally.
15/2699	Urethritis.....	Urethral swabbing and culture.	*S. albus, S. aureus*, diphtheroid.	Mixed coccal and diphtheroid. Later mixed coccal vaccine and separate diphtheroid vaccine.	Dr. H. C. R. Darling.....	Course, six weeks. 100 mill. diphtheroid, 500 mill. *S. aureus* and *albus*. Other treatment: Urethral dilatation and irrigation.	Improved (still threads with pus cells.)	
15/3539	Urethral discharge	Urethral swab	Gram negative bacilli; *S. aureus.*	*S. aureus*	Balmain Hospital	.....	.....	
15/2313	.....	Swabbings from vagina.	*S. albus* and diphtheroid.....	Mixed vaccine, *S. albus* and diphtheroid.	Balmain Hospital	.....	.....	
			Later, *S. albus*.....	Later, *S. albus.*				

No.	Disease.	Specimen.	Organism found.	Organism from which vaccine was prepared.	Reporter.	Course, Dosage, &c.	Result.	Notes.
15/4221	Bronchit	Sputum	Pneumococcus; gram negative coccus.	Mixed pneumococcus and gram negative coccus.	Dr. Stephens (H.M.A.S. "Tingira").	Three doses given	Cured.....	Cleared up. Has had no colds since. Is a very much improved boy in health. The ordinary physical drills, &c., have been given.
15/4221	Bronchitis and sore throat...	Sputum	*Streptococcus*	Mixed streptococci.....	Dr. Stephens (H.M.A.S. "Tingira").	Course, ten days. Three doses given	Cured.....	No attack since.
15/4112	Bronchitis	Sputa (2)	*S. aureus*; gram negative cocci (probably *M. catarrhalis*); pneumococci.	Mixed vaccine	Dr. Stephens (H.M.A.S. "Tingira").	20 mill.; if no reaction, 40 mill. in three days; if no reaction, 100 mill.	Nine boys cured, two boys improved, two boys unaffected; total thirteen.	This vaccine was mainly used as a stock vaccine for the epidemic on the ship, and was thus given to thirteen boys. The use of this vaccine cut short the attacks of nine out of thirteen boys. In the other four possibly the infection was not in line with the mixed vaccine. The result of this was sufficiently good to warrant its repetition this year if a similar crop of cases occur on board, for there was a very great difference between the vaccinated and the non-vaccinated.
15/5624	Acute purulent bronchitis ...	Sputum	*M. catarrhalis*; gram positive coccus; gram negative bacillus.	*M. catarrhalis*	Dr. T. Sholto Douglas.....	Course, two weeks. Initial injection 25 mill., two days later 50 mill., then four injections of 100 mill. at intervals of three to five days.	Much improved.....	Tubercle bacilli not detected. Expectorant mixtures and open air during whole treatment.
15/3930	Bronchitis and asthma	Sputum	*Streptococcus*; diplococcus...	Mixed *Streptococcus* and diplococcus.	Dr. Bowman	.....	.....	Tubercle bacilli not detected.
15/6011	Chronic bronchitic catarrh of two years' duration.	Sputum	(1) *Streptococcus* and slender gram positive and gram negative bacilli. (2) Gram positive diplococcus; gram positive and negative cocci, and slender gram negative coccobacilli.	(1) Streptococcus..... (2) Mixed vaccine.	Dr. R. Bowman	Course, four months. 250 mill. increased to 500 mill. Tonics and occasional cough mixtures.	Cured.....	Tubercle bacilli not detected. Complete cure of chronic bronchitis, cold and catarrh, gain in weight of 8 lb.
15/3961	Broncho-pneumonia	Sputum	*Streptococcus*	Mixed streptococci	Dr. Whiting	Course, about seven weeks. First dose 16 mill., second 25 mill. in three days, 30 mill. three days later. Increasing dose by 6 mill. up to 42 mill. with increasing intervals between doses up to ten days.	Cured.....	Tubercle bacilli not detected. "The vaccine in this case I am sure helped greatly in the final result. The dyspnœa grew markedly less after first two injections."
15/4654	Double broncho-pneumonia (temperature remained oscillating; no empyema detected by exploration).	Sputum	(1) Gram negative diplococcus. Later, (2) Yeast; *S. aureus*.	(1) Gram negative diplococcus. (2) *S. aureus*.	Dr. Gaden.....	(1) Course, ten weeks. Six injections, 50 mill. to 100 mill.	Recovery.....	Tubercle bacilli not detected. Age, 7 years. Usual treatment for broncho-pneumonia before vaccine used. During vaccine treatment nothing else given. Temperature gradually fell to 99 degrees as maximum, and general improvement in patient's condition.
15/4081	Lobar pneumonia (continued temperature for three weeks).	Sputum	Pneumococcus; gram negative diplococcus; gram negative bacillus.	Mixed vaccine	Dr. S. H. Weedon, Wagga Hospital.	.....	.....	Tubercle bacilli not detected.
15/7	Pneumonia (acute) and empyema.	Sputum	*Streptococcus* and coliform ...	*Streptococcus*	Tamworth Hospital	Course, sixteen days. Five injections, 12 mill. to 50 mill.	Unaffected	Tubercle bacilli not detected. Operation for empyema. Vaccine given afterwards. Ammon. carb., &c. Quinine and iron. Discharged cured.
15/1377	Chronic interstitial pneumonia.	Sputum	Pneumococcus; gram negative bacillus.	Pneumococcus	Dr. Harbison	Course, six weeks. 100 mill.....	Marked improvement, ending in complete recovery.	Tubercle bacilli not detected. Patient increased in weight by 10 lb. in the six weeks of treatment; finally recovered, and has remained in good health.

No.	Disease.	Specimen.	Organism found.	Organism from which vaccine was prepared.	Reporter.	Course, Dosage, &c.	Result.	Notes.
15/1106	Pleurisy with effusion	Culture	*Streptococcus*	*Streptococcus*	Coast Hospital	Course, two months. 25 mill. increased by 25 mill. every four days. Last dose 500 mill. Chest aspirated several times. General treatment—open air, tonics, increased diet, &c.	Unimproved	Patient left hospital able to do light work tolerably well.
15/1931	Empyema	Sputum	Streptococcus; *S. aureus* and *S. albus*.	Streptococcus	Dr. K. Whiting	Course, about seven weeks. 12 mill., increased by 6 mill. each dose, three days interval between first two doses, then extending to seven to ten days. Operation and drainage.	Unaffected	Child, 4 years. Patient is still uncured and in Children's Hospital. Tubercle bacilli not detected.
5/3831	Empyema	Pus from pleural cavity; sputum.	*S. aureus; S. aureus* and *S. albus*.	*S. aureus; S. aureus*	Armidale Hospital	500 mill. weekly. No other treatment	Very satisfactory	Tubercle bacilli not detected.
15/5152	Empyema	Swabbing of pus	*S. albus;* pneumococcus	*S. albus;* pneumococcus	Dr. Blackall	Course, three months. 50 mill. gradually increased to 150 mill. Drainage of pleura through an incision between the ribs.	Improved	This patient suffered from exophthalmic goitre.
15/1904	Abscess of lung	Sputum	(1) Pneumococcus (2) Later—*Streptococcus* and diphtheroid. (3) Later—*Streptococcus*	(1) Pneumococcus (mixed)... (2) *Streptococcus.* (3) *Streptococcus.*	Dr. P. Lalor	Course, six weeks. 50 mill. once a week for two weeks, then 100 mill. for four weeks. Tonics and expectorant mixtures. Open air treatment. Scott's emulsion.	Improved	Tubercle bacilli not detected (five occasions). There is a suspicion of an underlying tubercular basis in this case.
15/2621	Abscess of lung	Pus	*Streptococcus*	*Streptococcus*	Tamworth Hospital	Patient died before vaccine arrived	.....	
15/5936	Abscess of lung following operation for hydatid of lung.	Sputum	Gram positive coccus, probably pneumococcus. Also some gram negative cocci and gram positive bacilli.	Gram positive coccus, probably pneumococcus.	Cooma Hospital	Course, three weeks. Three injections, 60 mill., 125 mill., 125 mill. Expectorant mixture. General hygienic measures before and during vaccine treatment.	Unaffected	Tubercle bacilli not detected (twice). "Patient has had several attacks of severe illness due to pus becoming blocked up in lung and after a week or two bursting into bronchial tubes and causing much distress. Patient did not attend regularly for injections and finally gave up treatment; since then had another abscess."
15/4019	Bronchiectasis	Sputum	(1) *Streptococcus* and slender gram positive bacillus. (2) Gram negative cocci; Gram positive cocci and diphtheroids (?) (3) Pneumococcus and gram negative coccus.	(1) Mixed vaccine (2) Mixed vaccine. (3) Mixed vaccine.	Coast Hospital	(1) Course, three months. 25 mill. to 200 mill. (2) Course, three months. 250 mill. to 500 mill. (3) Course, three months. 25 mill. given dose increased by 25 mill. for three weeks, then increased by 50 mill. weekly. Last dose 500 mill. Other treatment—General treatment as for lung cases. Extra diet, iron tonics and lung antiseptics, *e.g.*, creosote inhalations.	(1) Unaffected (2) Unaffected. (3) Improved.	Tubercle bacilli not detected.
15/5553	Bronchiectasis	Sputum	(1) Gram negative diplococcus; coliform bacillus. (2) Two months later, *M. catarrhalis*. Small gram negative bacillus. (3) Six weeks later, *M. catarrhalis*.	(1) Mixed vaccine of diplococcus and coliform bacillus. (2) Mixed vaccine. (3) *M. catarrhalis.*	Dr. J. Shedden Davis, Marrickville Cottage Hospital	(1) Course, about seven weeks. Initial dose, 100 mill., increased to 500 mill. (2-3) Under treatment (1916).	Improved	Tubercle bacilli not detected (three occasions). Age, 8 years. Parents consider child definitely better after each injection.
15/4253	Gangrene of lung (?)	Sputum	Pneumococcus; gram negative bacillus.	Pneumococcus	Dr. T. Sholto Douglas	Course, ten days. Five injections, 25 mill. to 50 mill.	Improved. Discharged cured three weeks after cessation of vaccine treatment.	Tubercle bacilli not detected. Expectorant mixtures. Open-air treatment during vaccine treatment.
15/3553	.....	Sputum	*Streptococcus*; gram positive bacillus.	*Streptococcus*	Balmain Hospital	.....	.....	Tubercle bacilli not detected.
15/4397	.....	Sputum	Fluorescent gram negative bacillus.	Gram negative bacillus	Dr. Martin	.....	.....	Tubercle bacilli not detected.
15/4361	.....	Sputum	*Streptococcus*	*Streptococcus*	Dr. K. Whiting	.....	.....	Tubercle bacilli not detected.

Respiratory System—*continued.*

No.	Disease.	Specimen.	Organism found.	Organism from which vaccine was prepared.	Reporter.	Course, Dosage, &c.	Result.	Notes.
15/1469	Broncho-pneumonia (previously treated for pulmonary tuberculosis).	Sputum	Coliform bacillus; *S. aureus*	Mixed coliform and *S. aureus*	Dr. Weedon	Course, three months. Nine injections, 30 mill., gradually increased to 500 mill. Anti-phlogistin, expectorants, &c.	Much Improvement	Tubercle bacilli not detected. Patient had been running hectic temperature for weeks; night sweats; no appetite; wasting, &c. The vaccine caused a wonderful change. Slept well, tongue cleared up, appetite improved, chart gradually became normal.
15/117	Fibroid phthisis	Sputum	(1) *Staphylococcus*, pneumococcus, and gram negative diplococci.	(1) Mixed vaccine	Dr. K. Whitlng	.....	.....	Tubercle bacilli not detected (examined twice). Patient died eight days after second dose of third vaccine with acute broncho-pneumonia.
15/3255			(2) Later, coliform bacillus...	(2) Coliform bacillus.		(2) Course, six or seven weeks. 125 mill., increased by 30 mill. each dose, gradually increasing interval between doses to ten days.	Improvement.	
			(3) Later, *M. catarrhalis*.....	(3) *M. catarrhalis.*		Course, three days. First, 170 mill., second. 200 mill.	Unaffected.	
15/2580	Pulmonary tuberculosis and mitral stenosis.	Sputum	*S. aureus*	*S. aureus*	Dr. Boelke	Course, one month. 50 mill. first dose, increased by 50 mill. each dose, twice a week.	Improved	Other treatment—small doses of tuberculin. Cough disappeared. Patient has had two hæmorrhages since.
15/2734	Bronchitis and pulmonary tuberculosis	Sputum	(1) *Streptococcus* and gram negative bacillus.	(1) *Streptococcus.*	Dr. Boelke	(1) Course, one month. 25 mill., 40 mill., then increased by 10 mill. to 80 mill.	(1) Improved	Tubercle bacilli not detected. Small doses of tuberculin.
			Later—(2) Pneumococci and gram negative cocci.	(2) Mixed vaccine.		(2) Course, three months. 25 mill., 50 mill., increased by 10 mill. to 90 mill. at weekly intervals. 90 mill. given six times.	(2) Much improved.	
14/1700	Pulmonary tuberculosis (with mixed infection).	Sputum	*Streptococcus.* Oval diplococci. Some gram negative bacilli.	Mixed streptococcal vaccine	Dr. B. R. Boelke	Course, about two months. 5 mill., 15 mill., 20, 30, 40, 50 mill. at three days' intervals. Last dose repeated eight times combined with doses of P.T.O.	Improved	Patient has lost his cough and seems well.
15/1031	Pulmonary tuberculosis	Sputum	Tubercle bacilli; *Streptococci* and other bacteria.	*Streptococcus*	Dr. E. K. Herring	Course, three weeks. 100 mill. weekly. Other treatment, routine.	Sputum cleared up almost completely.	Patient had been under treatment by injection of T.R. without much effect for two months.
15/4716	Acute pulmonary tuberculosis.	Sputum	Tubercle bacilli. (1) *S. aureus* and a few *S. albus.*	(1) *S. aureus*	Dr. Bowman	Course, about two and a half months. 100-500 mill. Mixed vaccine.	Improved during vaccine treatment. Gained 10 lb.	No treatment for seven weeks, during which time patient had been in country, had lost 9 lb. X ray showed lung clear, no T. B. deposit to be detected. Have since lost sight of him. During vaccine treatment with rest and full feeding, temperature remained about normal.
			Later—(2) *S. aureus* and *S. albus* and fine colonies of positive cocci.	(2) *S. aureus;* also mixed vaccine of fine colonies of positive cocci.				
			Later—(3) *Streptococcus*, &c.	(3) *Streptococcus.*				
15/2999	Broncho-pneumonia and pulmonary tuberculosis.	Sputum	Fluorescent bacillus; *Streptococcus.*	Fluorescent bacillus	Dr. B. R. Boelke	Course, two months. 50 mill., increased by 50 mill. at weekly intervals. Injections of P.T.O. and P.T.	Much improved	Tubercle bacilli present. Still under treatment with tuberculin.
15/3650	Pulmonary tuberculosis	Sputum	Coliform bacillus	Coliform bacillus	Dr. R. Bowman	Vaccine not used. Patient left the State before treatment could be started.	.....	Tubercle bacilli not detected.
15/3650	Pulmonary phthisis (advanced).	Sputum	Tubercle bacilli; coliform bacilli; cocci.	Mixed vaccine	Dr. R. Bowman	Five vaccine injections of mixed vaccine were given without any good result.	Unaffected.	Patient has since died.
15/6022	Pulmonary tuberculosis	Sputum	Tubercle bacilli; *S. aureus;* a few gram negative bacilli.	*S. aureus*	Dr. Ritchie, Armidale and New England Hospital.	Vaccine was not used	.....	

Division II.—Pathological Tissues.

9. SECTIONS OF TISSUES FOR MICROSCOPICAL EXAMINATION.

(J. B. Cleland.)

During the first five years of the establishment of the Bureau of Microbiology (Microbiological Laboratory), namely from 1909 to 1913, inclusive, 1,014 sections of tissues were entered in the book kept for recording these. As in a few instances duplicate entries were made, and occasionally tissues not human were also entered, it may be roughly said that during this period tissues from 1,000 cases were examined microscopically. As this number extends to the end of the year 1913, a review of the cases treated allows of an opportunity of ascertaining the after-histories of some of the cases on which opinions were offered. In the case of definite or suspected malignant disease, the after-history of cases is often of very great value as showing the accuracy or otherwise of the microscopic diagnoses submitted. It has been specially in these cases that an effort has been made, through the medical man submitting the specimen, to obtain the after-history. As recurrence appears as a rule within a year of removal of the primary growth, the value of after-histories obtained in this series should be considerable, especially in those instances where the microscopical diagnosis did not agree with the clinical one. It has been our endeavour to obtain information of as many cases as possible with this end in view.

It may here be pointed out that the majority of the tissues submitted for examination are the results of operative procedures, and are submitted for confirmation or otherwise of the clinical diagnosis made by the surgeon, and as a guide for his future method of dealing with the patient. Comparatively little *post-mortem* material is included in these returns, which therefore differ considerably from returns of a similar nature if made up from a hospital pathological laboratory.

The routine method of preparing sections carried out by the laboratory consists in making paraffin sections in the ordinary way, and using as a routine stain iron hæmatoxylin and eosin. There is not the slightest doubt in our minds that the use of the former stain, which shows out so clearly nuclear and other cell structures, enables a satisfactory diagnosis to be made in many cases where the employment of other forms of hæmotoxylin would leave room for doubt, the cell picture being less distinct. We would like here also to call attention to the dangers that may follow the rapid preparation of sections of tissues. This must necessitate imperfect fixation and considerable cellular disturbance, which is obviated to a much greater extent by the slower routine embedding. Whilst in many instances rapidly-cut frozen sections or rapidly-embedded paraffin ones may enable a definite opinion to be expressed by the pathologist within perhaps a few minutes or a few hours of receiving the section, this advantage is counteracted to a very great extent when the tissue submitted is a difficult one to diagnose. If the surgeon in the operating theatre is waiting to know the result of such an examination, he should be prepared to receive from the pathologist one of three reports: either that the condition is certainly malignant, or that it is certainly not malignant, or that a definite opinion can only be expressed after carefully embedded sections have been specially stained. If the pathologist feels it incumbent upon him in all cases to give a positive or a negative diagnosis, he is merely courting disaster, and it would be much better to refuse to undertake such examinations at all rather than be expected to pronounce dogmatically upon what must, in some cases, be mere guess-work.

A rough grouping of the thousand cases dealt with by us during the five years shows that just over 300 of these came from the uterus, ovaries, or Fallopian tubes—in 167 instances the tissue examined came from the uterus; in 78 from the cervix; in 28 from the ovary; in 13 from the Fallopian tubes; and in 16 from the vagina, &c. Of, the remaining 700 about 109 were derived from the breast. Of these, 41 were malignant and 68 non-malignant. Thirty-one tissues from the lip were submitted for the presence of malignant disease, and 14 from the tongue, whilst epithelial growths from other parts numbered about 85; 23 vermiform appendices were submitted, and from other parts of the intestinal canal 21 tissues, 17 of which latter proved malignant. The tissues were found to be tubercular in 23 cases, whilst in 37 cases lymphatic glands were examined which proved not to be tubercular. In 23 instances organs derived from post-mortem cases were submitted for a more or less general examination. Amongst the whole series there were 41 cases of sarcomata.

The above will indicate roughly the nature of the examinations carried out by us, and it is proposed to take the various groups in detail, showing various points of interest in connection with each. In the present report we propose to deal with sections from the uterus, ovaries, Fallopian tubes and adjacent parts, as well as with the vermiform appendices removed and certain tissues passed by the urethra and anus. The other groups will be dealt with in later reports.

Vermiform Appendix.

Twenty-three specimens of the vermiform appendix were submitted for microscopic examination for the purpose of ascertaining the presence of inflammatory changes. The majority of these showed various stages of inflammatory reaction, passing from an acute polymorphonuclear infiltration of the already partly fibrosed appendix, to others showing the presence of plasma cells in more or less abundance in varying degrees of fibrosis, up

to

to instances where the fibrosis was more dense. In some instances the lumen was in part more or less occluded by chronic inflammatory tissue. In one case an appendix showing a moderate degree of fibrosis, showed by carbol-thionin staining scattered connective tissue cells with basophilic granules (mast cells) scattered throughout the wall. Doubtless these cells would have been met with in many other instances if the carbol-thionin stain had been more used.

Amongst the most interesting specimens the following may be mentioned :—

Dilated appendix.—In one case where the appendix had been removed, together with a lobulated cystic ovarian mass the size of a child's head (multilocular cyst), the distal portion of the appendix was dilated to the size of an almond, and was full of a thick jelly-like material. Its wall was not definitely thickened. Sections of the dilated portion of the appendix did not reveal the presence of any epithelium. The cells in the inner part of the wall were separated to some extent by a granular matrix and stained poorly, whilst by the mucicarmine method in places was a slight infiltration of mucinous threads. The proximate portion of the appendix was almost occluded.

Dilated appendix in an aboriginal.—Dr. Lewis, of Narrogin, Western Australia, in 1909, kindly forwarded us an appendix and caecum of a young aboriginal woman, who had died from tuberculosis. The appendix was dilated and thin-walled, and the size of a small little finger. No evidence of tuberculosis was detected in it. At most the surface epithelium had been shed. At the post-mortem there appeared to be several adhesions.

Appendix with foreign body.—An appendix showing some fibrosis of its wall and small connective tissue cell infiltration, which had come from a woman, was found to contain in its lumen some fragments of a foreign body resembling chitin.

Fibroma at orifice of appendix.—In 1911 Dr. Worrall submitted a specimen of an appendix and adjacent part of the caecum, which showed a small white fibrous-looking rounded tumour, the size of a cherry, at the orifice of the appendix. That organ was much thickened, but its lumen was not occluded. The small growth proved to be a fibroma, consisting of wavy bundles of fibrous tissue, with scattered elongated cells. The wall of the appendix showed apparent hypertrophy of its muscular coats.

Tissues supposed to be passed *per urethram* in the urine.

Specimens of this nature were submitted from nine separate cases. In five instances the tissue appeared to consist of fibrin and blood clot with entangled cells. In another instance necrosed tissue, probably of bladder origin, was found. In two cases the material was of vegetable origin, and in another case consisted of striped muscle; these three definitely showing an adventitious origin.

Tissues passed *per rectum.*

In four cases tissues of this nature were submitted. In one case the material consisted of mucus and in another apparently of undigested food. In a third case a fibrinous cast, presumably from portion of the bowel, was passed, which, from the history of the case, may have had an origin in an infection by the diphtheria bacillus. This case will be found detailed in full in the Annual Report of the Microbiological Laboratory for 1913.

Tissues Coughed Up.

Apart from several instances in which hydatid membrane has been coughed up, materials were submitted in five cases. These usually consisted of blood clot and fibrin or mucus, though in one case the material was evidently food.

Tissues from the Uterus.

Specimens from the uterus have been examined in 167 cases. Eighteen of these were in connection with fibromata, and in 31 of the remainder evidence of pregnancy was detected, which explained the submission of the specimens. In no case was chorion-epithelioma met with. Of the remaining 118 cases the material was submitted usually on account of symptoms suggestive either of malignancy or of retention of placental remains. In the majority of instances the examination was made for the exclusion of the presence of malignant disease. In only 13 out of these 118 cases was a malignant condition met with. This shows a marked contrast with the results obtained from portions removed from the cervix uteri, in which one out of about four cases showed the presence of malignancy, whereas in barely more than 10 per cent. of the uterine scrapings was this condition met with. The accessibility of the cervix to the examining finger and the ease with which inspection may be made of its actual appearance probably account in part for this difference in the proportion of malignant cases.

Various conditions of the uterus give rise to symptoms similar to those produced by an early cancerous growth, and as the interior of this organ cannot be viewed and the condition of its mucosa only ascertained by means of a curette, it naturally happens, and very rightly so, that in every suspicious case, however slight the suspicion, the pathologist's services are called in to express an opinion on tissue removed. Apart however, from this it would appear that malignant disease of the uterus is distinctly less common than squamous epithelioma of the cervix. In several instances appearances have been presented, which prevented our expressing an opinion excluding malignant disease, though we expressed the belief that the tissues in question were not carcino-

matous

matous and entered them accordingly. In other cases, where clinical symptoms were more especially suggestive, the surgeon has decided in view of the doubt to do a hysterectomy. In several instances in which this was done and in which doubt had been expressed as to the nature of the condition, an examination of the organ on removal has shown the absence of detectable malignant disease. In other words it would seem, at any rate from our limited experience, that the cases which are malignant show very definite characters under the microscope, so that the diagnosis is at once made, whilst in those cases in which much thought and a long examination at last enable one to express a tentative opinion usually prove to be non-malignant. Out the 13 cases in which a malignant condition was diagnosed, a more or less definite tubular arrangement was distinctly recognisable in 12; in the remaining case there was a diffuse infiltration of a loose stroma by malignant cells, which were either isolated or in small masses, and the original arrangement could not be determined. In one of the 12 cases, the tubular arrangement was very indistinct. In another instance there was a very typical tubular arrangement in one situation in the organ, whilst in another part a tendency to form tubules could barely be recognised, the cells growing in masses. Sometimes the growth consisted of an almost solid mass composed of compressed tubules, separated by a minimum of stroma, and exhibiting scattered lumina in their centres. The regularity of the tubules varied considerably from an arrangement departing not much from the normal to extensive convolutions with ingrowing processes. The cells lining the tubules were usually elongated and columnar with large, often very large, deeply staining nuclei, and were arranged in several layers. Where normal tubules can be seen in juxtaposition to those of the new growth, a very striking difference can often be noted in the size of the tubules, and in the large deeply-staining cells of the malignant growth in which the nuclei occupy the centre of the cells as compared with the smaller less deeply staining normal epithelial cells with basal nuclei. The stroma itself was as a rule a loose cellular fibrous tissue well supplied with capillary vessels. In some cases this stroma was reduced to a minimum. In only one instance was the stroma dense and fibrous, and in this case there were small masses of epithelial cells, which were beginning to degenerate, isolated as islands in this dense stroma.

Uterine Mucous Membrane.

Material from the uterine mucous membrane, as submitted for pathological examination, may be divided into the scrapings removed by curetting, and into material obtained at an operation or at a post-mortem, including the whole uterine wall. Unfortunately for diagnostic purposes, opinion has frequently to be expressed on the results of uterine scrapings only, but the opinion thus expressed in some cases has a chance of confirmation later by sections made through the uterine wall of the removed organ. It is obvious that there is no possible way by which a more accurate diagnosis can be made in many cases but that obtained by examination of scrapings removed by the curette. It is also recognised, however, that this is a very crude method of obtaining material, and at best gives one but little real idea of the actual condition of the mucous membrane. It is essential, therefore, to make the best diagnosis possible under the circumstances, and it is with this object in view that the following descriptions of uterine scrapings have been tabulated and provisionally grouped under certain headings.

The study of uterine scrapings is much complicated by the changes which the uterine mucosa undergoes during menstruation and during pregnancy. Under these different conditions the normal mucosa shows great differences, which have to be distinguished from changes of a pathological nature, which may be superadded to the normal physiological alterations. The normal non-menstruating mucosa may be said to consist of more or less straight tubules, lined by tall columnar cells, separated from each other by a cellular stroma of round or some elongated cells. During menstruation the stroma cells become larger and the tubules show sproutings into their lumina, and are also wider. These changes are still more marked during pregnancy.

In examining our series of 80 sections of uterine scrapings, these may be roughly grouped into the following categories :—

1. Approximately normal in type, 8 cases.
2. Showing a sprouting condition into the lumen of the tubules, probably indicating the proximity of menstruation, 4 cases.
3. The tubules, instead of being straight, are more or less irregular, and more or less dilated, often considerably so. This may be termed *Endometritis glandularis hypertropica*, being a departure from the normal in the direction of an increase in size of the tubules, with a varying amount of irregularity. Twelve cases are to be put under this category, which merges on the one hand into the normal type, and on the other hand into the following group.
4. The condition of the tubules is similar to that in the preceding, but the stroma shows more or less extensive separation of its elements by œdema, often accompanied with blood extravasations. Twenty-eight cases come under this category.
5. *Endometritis glandularis hyperplastica.*—In this condition, not only are the glands dilated and irregular, but they are increased in number. Only one case seems to approximate to this type.

6. *Endometritis interstitialis.*—The former pathological conditions, though termed endometritis, are probably less of the nature of an inflammatory reaction than of an altered physiological condition, due probably, in many cases, to congestion or other alterations, primarily caused by faults in the body of the uterus. In endometritis interstitialis, on the other hand, we have a condition probably caused by bacterial infection of some kind, resulting in a reaction in the stroma evidenced in many cases by the presence of plasma cells. *Endometritis interstitialis*, in fact, represents a bacterial infection or sub-infection. We have placed two cases under this heading.

7. *Endometritis polyposa.*—In one case the fragments submitted would seem to agree with the description of this condition, which consists of a polypoid projection of the uterine mucosa. The specimens showed congested uterine glands in a cellular stroma, with some hæmorrhage and œdema. There was a large mass with large, irregular microcysts separated by a fibrous cellular stroma, in which vessels ran. This mass resembled cervical tissue, but was sent as scrapings from the uterus, and probably is an instance of the condition mentioned above.

8. In 16 cases the material submitted merely showed a few tubules surrounded by a cellular stroma, accompanied as a rule by much blood clot. This material was too small to enable a definite opinion to be expressed as to the condition of the uterine mucosa, though in most cases with considerable certainty the question of malignancy could be excluded, chiefly on the ground that if a malignant condition existed, the excised material from this cause should have been more abundant. In 8 cases the material submitted either had become too dry to enable sections to be cut, or sections showed the presence of blood clot only, and in one case, where the material came from a body which had been floating in the water for some days, no opinion could be expressed.

Details of Uterine Scrapings—Non-malignant.

(1) Approximating to the normal type.

H. 178.—Fairly separated glands in a moderately dense cellular stroma with elongated cells.

The uterus was large and bulky and it was thought that there was possibly some growth of a fibrotic nature.

H. 474.—Slightly irregular tubules moderately separated by a fibro-cellular stroma.

"Mrs. D. H.," 51 years.—The only symptoms were profuse hæmorrhage five months before and again three weeks previously.

H. 527.—Scattered tubules with cells, apparently degenerated, in a fibro-cellular stroma, much infiltrated with hæmorrhages.

H. 547.—Widely separated tubules in a cellular stroma.

Patient, 42 years old, with an enlarged uterus and suffering from metrorrhagia. A doubtful miscarriage three months ago.

Submitted for malignancy, decidual cells, &c.

H. 855.—Much clot with tubules, occasionally slightly dilated, in a very cellular stroma.

"Mrs. L.," aged 46 years.—Submitted for malignancy or adenomyoma.

H. 910.—Somewhat irregular tubules in a cellular stroma.

25th August, 1913.—Patient aged 45 years; one child, 21 years old. Hæmorrhage for three weeks, posterior wall of uterus thickened.

January, 1915.—No return of symptoms. Patient alive and in good health.

H. 912.—Normal straight tubules in a cellular stroma. Stroma cells showing mitoses separated in places by œdema; hæmorrhages in places.

25th August, 1913.—"Mrs. M.," submitted for suspected malignancy.

January, 1915.—Patient alive and in good health.

H. 1004.—Normal tubules in a rather œdematous cellular stroma with a few extravasated red cells.

22nd November, 1913.—"Mrs. C.," aged 42 years; three children, the last sixteen years ago; no miscarriages. Last period six weeks ago. Two weeks later hæmorrhage off and on, which has continued ever since. Uterus slightly enlarged.

January, 1915.—Clinical evidence supported the microscopic opinion. The patient alive and not sick.

(2) Sprouting glands, often menstrual, closely packed.

H. 259.—Glands close together and sprouting, in a loose cellular stroma with blood extravasations. The epithelial cells large with definite nuclei, some of the stroma cells almost like decidual cells.

In reporting on its appearance it was stated that "A definite opinion could not be expressed from the tissue submitted. The appearance seen did not exclude malignancy. A few large cells were seen resembling decidual cells."

10th

10th November, 1910.—"Mrs. S.," aged 40 years; two children, the youngest six months. Severe hæmorrhage for weeks; no uterine contraction pains; os rigid and stiff; the uterine body very hard and cartilaginous to the curette.

October, 1914.—There was evidence of a fibroid condition with hæmorrhage, but none of malignancy. The patient was now alive and in fair health.

H. 346.—Enlarged irregular tubules with sprouts, packed fairly closely together separated by a minimum of œdematous stroma with vessels. Decidual cells present, also some possible plasmodial masses. Submitted as uterine wall after disappearance of fibroids following on pregnancy.

H. 521.—Somewhat irregular and dilated tubules packed fairly closely together in a loose œdematous cellular stroma with hæmorrhages in places. Specimens submitted were said to be scrapings from the uterus, a piece from the cervix, and a polypus from the cervix.

The above were the only appearances seen in sections.

Carcinoma suspected.

Menstrual Cast.

H. 592.—A cast of the uterus showing a loose œdematous cellular stroma with blood clot. No tubules detected.

21st May, 1912.—The following are Dr. George Watt's notes on the case :—

"A piece of membrane passed *per vaginam* by a girl aged 18 years. Fourteen days ago this girl was seized with sudden pain in the epigastric region in the middle line. She suffered greatly from shock, and 24 hours after passed tarry stools. I recognised it as a perforating gastric or duodenal ulcer. Nature sealed the opening, as she virtually made an excellent recovery until the eighth day, when she was seized with another violent attack of pain. I was out beyond Coonamble seeing a patient, and Dr. Burkitt of Dubbo saw the case for me. She was dreadfully collapsed when he saw her, and he had little hope of her recovery. However, she picked up again, and I have been giving her horse serum by the mouth.

"On the day she had the second attack she menstruated after six weeks. Her mother states she is irregular. The menstrual period lasted five days (the normal time) and on the fifth day this membrane was shed, without any pain. The lochia is still there but perfectly sweet. I would be indebted to you if you would tell me what this is. The girl's condition now is *no* general or apparent peritonitis (there has not been any signs of peritonitis). Pulse 90, regular, full. Temperature 99·8°. When very ill her pulse ran to 140, falling gradually and improving as it fell. *She is now jaundiced.*"

In reporting on this specimen it was stated that it seemed to indicate that it was really a menstrual cast of the uterus. Later Dr. Watt gave the following information :—

"It was because it showed no signs of placenta I sent it to you. I was quite at sea only I had seen another case similar to this years ago. The patient has done well and is quite free of jaundice. I fancy the jaundice was due to an inflamed condition of the duodenum extending to the opening of the common duct and causing a partial occlusion. This is only conjecture of course, and, I am thankful to say, cannot be confirmed by a P.M."

October, 1914.—No recurrence. Patient alive and well.

(3) *Endometritis glandularis hypertrophica*, characterised by corkscrew glands, moderately separated by a cellular stroma.

H. 48.—Somewhat irregular glands, with normal epithelium, widely separated by a dense fibrous stroma, with scattered cells and a moderate number of vessels.

Submitted as a cutting from the os uteri, with suspicions of malignancy.

H. 102.—Considerably dilated and somewhat irregular tubules, with tall epithelium, fairly widely separated by a very cellular fibrous stroma.

Submitted for evidence of malignancy.

H. 152.—Widely separated glands, some dilated into small cysts, in a fibro-cellular stroma with old blood extravasation.

Patient, 49 years old; general weakness and ill-health for twelve months; no pain or hæmorrhage; uterus enlarged and bulky.

H. 184.—Somewhat irregular and occasionally dilated glands in a cellular stroma.

No after-history obtainable.

In the original microscopical diagnosis submitted to the medical man, the possible suggestion of malignancy was mentioned on account of some aberrant masses.

H. 202.—Rather irregular glands in a fibro-cellular stroma.

In the original description it was stated that the epithelium was not typically normal, that the layers of cells were several thick, and that the epithelial cells surrounded hyaline-like cores.

In the report on the section it was stated that there was an abnormal arrangement of the epithelium, but that the material would not allow of a definite opinion as to whether malignant or not.

9th July, 1910.—"Mrs. S.," aged 48 years. Bleedings for the past two years at irregular intervals; uterus slightly enlarged; the os patulous; surface of the interior of the uterus was rough to the feel of the curette.

September, 1913.—Alive. No uterine symptoms. H.

H. 250.—Tubules, often considerably dilated, fairly widely separated in a fibro-cellular stroma. Hæmorrhages near the surface and into some tubules.

"Mrs. B.," 47 years old. Uterine hæmorrhage for the last fourteen months. Hæmorrhage very severe. No pain or discharge. Patient very thin and wasted. Uterus enlarged and somewhat hard.

H. 373.—Moderately separated, dilated, and irregular glands in a cellular stroma, with hæmorrhages in places.

July 3, 1911.—Patient, aged 46 years.

September, 1914.—Patient alive.

H. 530.—Rather irregular tubules in a cellular stroma.

24th February, 1914.—Patient, 35 years old; uterine hæmorrhage and pain for the last few months; malignancy suspected.

October, 1914.—Patient alive and quite well.

H. 535.—Dilated, somewhat sprouting and irregular, moderately separated tubules in a loose cellular stroma. Polymorphonuclear cells between the tubules.

H. 863.—Dilated and somewhat irregular tubules, often filled with blood in a very cellular stroma showing mitoses; also much blood clot.

"Mrs. D.," aged 45 years. Malignancy suspected.

H. 877.—Very irregular, often corkscrew-like, somewhat dilated glands, with sprouts in places, closely packed together, with a cellular stroma of large cells. Small arterioles, numerous at the base of the mucous membrane in one place, all thickened. This section was originally reported as "Sections show some irregularity of the uterine glands; the tissues are apparently not malignant, but must be looked on with some suspicion."

Submitted for fibroid disease or malignancy.

H. 971.—Glands, often considerably dilated, fairly close together in a loose cellular stroma, with hæmorrhages in places.

(4) *Endometritis glandularis hypertrophica* with Œdema, characterised by the tubules being usually corkscrewy or dilated, and the stroma cells separated by œdema or hæmorrhages.

H. 11 and H. 85.—16th April, 1909, chiefly blood clot; uterine glands in a loose stroma, with elongated connective tissue cells.

26th November, 1909.—Fragments of tubules with well-preserved cells and a round-celled stroma.

Woman, 51 years; malignancy suspected.

H. 95.—Somewhat irregular and dilated tubules, containing exudate in places, in a very cellular stroma, œdematous in places, with blood extravasations.

8th December, 1909.—From a married woman, 52 years old, with a history of persistent and severe hæmorrhage for six weeks.

September, 1914.—The patient was alive and well; she had had recurrent hæmorrhages, and the uterus was removed by sub-total hysterectomy on 25th August, 1912. It was an enlarged hardened fibrotic one, with the cavity enlarged.

H. 169.—Glands, sometimes dilated, with normal cells in a very loose œdematous cellular stroma.

Woman, aged 49 years; had suffered from slight irregularity. The clinical diagnosis was chronic endometritis. The body of the uterus was somewhat enlarged and hard, and the endometrium thickened. Malignancy was also suspected.

H. 203.—Some irregular glands in a moderately loose cellular stroma, with a small hæmorrhage near the surface. The uterus was hard and somewhat enlarged.

Clinical diagnosis, chronic endometritis.

H. 214.—Slightly dilated glands in a loose œdematous cellular stroma.

29th July, 1910.—Clinical opinion, chronic endometritis.

July, 1914.—Patient alive and well.

H. 323.—Corkscrew glands in a cellular matrix of elongated cells, œdematously separated by round cells near the surface.

Tissue from polypus and scrapings from the uterus.

H. 339.—Somewhat irregular tubules in a cellular stroma, somewhat œdematous in places.

Sent for evidence of malignancy.

H. 356.—Considerably dilated glands, with a cellular stroma, œdematous and with hæmorrhages in places.

In a report furnished at the time on this specimen it was stated, "The appearance does not suggest malignancy, but this cannot with certainty be excluded. This suspicion has reference to large cells in the stroma."

From a woman, 56 years old, with irregular uterine hæmorrhage for three years. The uterus hard and comparatively fixed.

H. 358.—Somewhat dilated and irregular glands in an œdematous cellular stroma.

H. 440 and H. 442.—One specimen showed chiefly fibrin, with a few degenerated tubules in a loose cellular stroma. The other showed moderately large separated tubules in a somewhat loose fibrous cellular stroma, with hæmorrhages in places. An ovarian fibroma was also submitted, but did not show malignancy.

30th September, 1911.—Symptoms and clinical appearance are extremely like carcinoma.

October, 1914.—No recurrence. Patient alive and well, and has since borne children after several years of sterility.

H. 449.—Much fibrin with scattered tubules in an œdematous cellular stroma.

5th September, 1911.—From "Mrs. T.," aged 53 years; uterine hæmorrage. The menopause not yet reached. Malignancy suspected.

August, 1914.—Patient quite well.

H. 454.—Considerably dilated, irregular tubules in an œdematous cellular stroma. Tubules moderately separated.

13th October, 1911.—Scrapings submitted.

October, 1914.—Clinical evidence supports the microscopical diagnosis. Patient alive and well.

For further details see under "Tissues from the cervix, non-malignant. Sect. (4) H. 336.

H. 473.—Somewhat dilated and tortuous glands, moderately separated by a loose cellular œdematous stroma. The cervix, which was the size of a walnut, showed an erosion and irregular invasion of the squamous epithelium with large vessels below.

Specimen submitted on 20th November, 1911.

September, 1914.—The condition proved non-malignant, and, as far as was known, the patient was alive.

H. 505.—Considerably dilated, irregular, moderately separated tubules in an œdematous cellular stroma.

H. 531.—Glands often dilated, moderately separated in a loose œdematous cellular stroma.

"History points to malignancy."

H. 611.—Moderately widely separated, rather dilated and irregular tubules in a cellular stroma. The stroma cells large and separated by œdema in places.

Submitted for evidence of the presence of decidual cells.

H. 633.—Tubules, often dilated into macroscopic cysts, moderately separated in an œdematous cellular stroma.

From "Mrs. B.," aged 49 years, 4-para, with some miscarriages. Menstruation every three or four weeks till recently, when it was less than three weeks and more profuse. Has now been losing without cessation for nine weeks. Patient is said to have been passing material like the scraping submitted for many weeks. "Is it a softening fibroid, or is it malignant?" Patient also has mitral incompetence, with a resulting congestion of most organs, which the medical man thought might account for the bulk of the material obtained by the curette.

H. 681.—Somewhat dilated and irregular glands in a cellular œdematous stroma.

H. 685.—Rather dilated tubules in a very œdematous cellular stroma.

Submitted for evidence of malignancy.

H. 733.—Much blood clot; tubules moderately separated in a cellular stroma showing blood extravasations and œdema.

10th December, 1912.—Submitted for suspected malignancy.

January, 1915.—Patient has had a recurrence of menorrhagia; is still alive.

H. 744.—A few tubules in a cellular stroma with old blood pigment and cells widely separated apparently by œdema with a moderate number of vessels.

Submitted for malignancy. Patient, 63 years of age.

H. 767.—Moderately dilated and somewhat irregular glands in a cellular stroma, with fibrin in the tubules, and the stroma œdematous in places and with blood extravasations in other places.

Submitted for placental tissue, malignant disease, or hypertrophic endometritis.

H. 774.—Widely separated tubules in an œdematous cellular stroma. Section from vaginal wall shows large interlacing bundles of fibrous tissue.

Specimen submitted 24th February, 1913.

January, 1915.—Patient alive and in good health.

H. 775.—Considerably irregular tubules, some degenerated, in a cellular strom œdematous in places; tubules fairly close together; much clot.

24th February, 1913.—Patient, aged 44 years. Last confinement in September, 1912, the birth being premature by two months, probably from measles. Uterine hæmorrhage since December, 1912.

June, 1914.—In good health.

H. 802.—Somewhat irregular glands with "inner tubules" in a loose cellular stroma with much hæmorrhage, infiltration and œdema.

1st April, 1913.—"Mrs. H.," aged 39 years, suffering from menorrhagia.

January, 1915.—Alive and in good health.

H. 926.—Somewhat dilated and irregular tubules, with invaginations, in an œdematous, cellular stroma. Fibrin in whorls.

H. 942.—Glands, a little tortuous and dilated, in an œdematous, cellular stroma with leucocytes.

Submitted for malignancy and for fibrosis uteri.

H. 1001.—Scattered glands in an œdematous cellular stroma with elongated cells.

Patient, 38 years old, with uterine hæmorrhage. Submitted for examination for possible malignancy.

(5) *Endometritis glandularius hyperplastica*, characterised by dilated or irregular glands, increased in number.

H. 393.—Moderately dilated and irregular glands, with the epithelium mostly shed into the lumina, fairly close together with a cellular stroma with hæmorrhages in places.

Patient, 57 years old, with uterine hæmorrhage.

(6) *Endometritis interstitialis* with Plasma Cells.

H. 479.—A few tubules in a cellular stroma, the stroma infiltrated with a few plasma and polymorphonuclear cells. The cervix also showed plasma-celled infiltration around the glands.

"Mrs. W.," 25 years.—One Fallopian tube removed, the other also acutely inflamed but left *in situ*.

H. 712.—Uterine glands moderately separated in a cellular œdematous stroma. A few typical plasma cells in the stroma.

Submitted for the presence of malignancy or decidual cells. A miscarriage nine days previously.

(7) *Endometritis polyposa cystica*.

H. 125.—Uterine glands in a cellular stroma with some hæmorrhage and œdema; also a large mass with large microcysts separated by a fibrous cellular stroma with vessels.

Submitted as scrapings from the uterus.

(8) A few tubules in a cellular stroma.

H. 84.—The fragment submitted showed tubules in a round-celled stroma with blood extravasation. The cells of the tubules were not degenerated.

History of bleeding for three weeks made the medical man suspicious, but the feel of the uterus whilst curetting made him quite certain it was not malignant.

H. 177.—A few glands in a cellular stroma.

Submitted for evidence of malignant disease.

H. 186.—Fragment of glands in a cellular stroma.

H. 249.—A few fragments of tubules in a cellular stroma. Portions from the cervix were fibro-cellular.

"Mrs. D.," aged 57 years.—A small growth from the cervical canal and uterine scrapings submitted. Clinically not malignant.

H. 284.—Fragments of glands in a cellular stroma.

Submitted as a snipping from the cervix in a patient over 50 years who had had some bleeding.

H. 319 and H. 492.—2nd March, 1911. Glands moderately separated in a cellular stroma with much clot.

8th December, 1911.—Chiefly blood clot with a few tubules in a cellular stroma.

H. 333.—Fibrin with degenerated tubules scattered through it.

H. 456.—Small fragments in a cellular stroma.

"Mrs. B."—Suspicions of malignancy.

H. 580.—A few degenerated uterine glands in an œdematous stroma.

"Mrs. H."—Malignancy suspected.

H. 601.—Chiefly blood clot. A patch of tubules in a cellular stroma; all degenerated.

H. 694.—Chiefly blood clot. A few tubules in a cellular stroma, also a few groups of epithelial cells with prickles, probably from the cervix.

"Uterine scrapings" submitted for malignancy.

H. 720.—A few dilated cysts in a fibrous stroma, probably from the cervix. Most of the tissue consisted of blood clot with a few tubules probably from the uterus, and an œdematous cellular stroma.

"Mrs. W.," aged 57.—History of bleeding from the vagina for one month. Climacteric present. Uterus much enlarged and very soft. Malignancy suspected.

H. 747.—Chiefly blood clot. A few remnants of tubules surrounded by a cellular stroma.

15th January, 1913.—A big mass on the left side of the pelvis, with a raised temperature and probably local peritonitis.

February, 1915.—Patient alive and well.

H. 805.—Chiefly fibrin in strands. A few tubules in an œdematous stroma.

Submitted for decidual cells.

H. 845.—Chiefly clot with a few tubules in a cellular stroma.

8th May, 1913.—Patient aged 43 years; last period seven months previously; the present flow for seventeen days, very profuse for the last three. Two children, the youngest aged 7.

January, 1915.—Alive and in excellent health.

H. 873.—Chiefly clot with fragments of tubules in an œdematous cellular stroma.

Submitted for malignancy.

(9). Specimens too small or imperfect for any diagnosis to be formed.

These consist of eight specimens, one of which, chiefly blood clot in which a few tubules were seen, was submitted in March, 1911, from a Mrs. C., aged 50 years, with persistent hæmorrhage.

29th September, 1914.—She was alive and well. Details

H. 49.—Columnar Epithelioma (*Body of Uterus*).

A regular columnar-celled epithelioma surrounded by some rounded and plasma cells, beginning to invade the muscular layer. Tubules regular in places, irregular and branched in others, the cells being degenerated, &c.

H. 222.—**Columnar Epithelioma** (*Body of Uterus*).

Much degeneration with little stroma.

Details of Sections of the Uterine Wall—Non-malignant.

(1) Uterine wall approximating to the normal type.

H. 64.—Normal tubules moderately separated by a fibro-cellular stroma. Thick-walled vessels were also present below the mucous membrane.

H. 150.—Medico-legal case from a buried body; tissues staining poorly.

H. 242.—Tubules in a fibro-cellular stroma, at the base of the mucous membrane increased in number and slightly irregular and dilated; cells partly degenerated, probably a post-mortem effect; vessels of walls congested.

This was a medico-legal case, in which there was an extravasation of blood into the hymen.

(2) Uterine wall, adenomyoma diffusum type.

H. 65.—Isolated tubules extending deeply in the wall, surrounded by enormous rounded connective tissue cells. The deeper layer of the mucosa is fibro-cellular, with some dilated tubules; in the superficial part is a loose stroma with enormous connective tissue cells and blood extravasations near the surface.

The specimen was submitted for examination for fibrosed uterus.

H. 68.—Wall invaded by widely-separated tubules, surrounded by a loose areolar cellular stroma.

Specimen was submitted as a fibroid uterus.

H. 218.—Tubules in a fibro-cellular stroma; the tubules not dilated and fairly straight. The cells of the tubules of the deeper layer of the mucosa were separated; the superficial layer was normal.

The uterus clinically apparently free from malignant disease; adenomyoma diffusum suspected.

August, 1911.—No sign of recurrence.

H. 448.—The mucosa is short, probably an arte-fact; the tubules are surrounded by a cellular stroma, with hæmorrhages near the surface. Some of the tubules are slightly irregular and dilated, and occasionally tend to invade the wall. The vessels are congested and thickened. The cervix shows large microcysts in a poorly cellular fibrous stroma.

H. 536.—The wall of the uterus shows rather tortuous glands, in a cellular stroma, in places situated deeply in the wall, and surrounded by a considerable number of elongated connective tissue cells. The vessels and wall are thickened. The cervix shows some fibrosis; the ovary is also rather fibrosed with large old corpora lutea.

From a patient, "Mrs. F.," aged 49 years, for evidence of malignancy.

(3) Uterine wall, Endometritis.

H. 545.—Rather tortuous glands in a fibro-cellular stroma. One small focus of lymphatic-like cells. Œdema near the surface of the mucosa, with blood in some of the tubules.

Macroscopically both Fallopian tubes were dilated and full of thin chocolate-coloured contents. There was a small intramural fibroid near the fundus of the uterus; the cervix was non-malignant.

Patient, "Mrs. P.," aged 46 years. Submitted for fibroid growth or malignancy of the cervix.

Details of Cases of Malignant Disease of the Body of the Uterus.

H. 25, H. 49.—Columnar epithelioma.

1st June, 1909.—Fragments submitted very small. The epithelium was in more than one layer with a few mitoses, and the arrangement was bizarre. Regarded as suspicious of malignant disease.

30th July, 1909.—Uterine scrapings. Some parts seem normal; others show uterine glands so closely approximated that only a single flattened layer of connective tissue cells intervenes between them. The cells of the glands are in places several layers thick and mitoses are fairly numerous. Regarded as suggestive of malignancy, but no dogmatic opinion could be expressed.

11th August, 1909.—Uterus and appendages removed. The upper part of the mucous membrane of the uterus thickened and somewhat irregular. Microscopic sections show an irregular cylindrical epithelioma surrounded by some rounded and plasma cells, which is beginning to invade the muscular layer. The tubules are regular in places, irregular and branched in others, the cells in places being degenerated.

H. 222.—Columnar epithelioma.

A much degenerated cylindrical epithelioma with little stroma.

Specimen submitted on 17th August, 1910, consists of friable, malignant-looking masses from a multipara of 56 years; uterus 5½ inches long; clinically malignant.

October, 1914.—"Clinically, I am positive the diagnosis was correct. The removed uterus is now in the Museum of the University, Sydney. There has been no recurrence; the patient was alive and very well six months previously." (Dr. Barrington).

H. 233.—Columnar epithelioma.

Sections show large irregular tubules, often with ingrowths, lined by tall columnar epithelium in several layers which were invading the uterine tissues. There are also areas showing normal small tubules lined by a single layer of smaller cells with basal nuclei and swollen distal ends. The malignant tubules were supported by a scanty cellular stroma with a few plasma cells and moderately numerous vessels.

H. 406.—

H. 406.—Columnar epithelioma.

Sections show irregular convoluted tubules opening irregularly into each other in a cellular stroma showing polymorphonuclear and round cells. The epithelial cells were in several layers and showed dark nuclei. There was much clot and degenerated tissue.

This case at the time was diagnosed microscopically as "suggestive of columnar epithelioma." It is undoubtedly malignant.

From a patient, "Mrs. S.," 44 years, with procidentia totalis. The uterus was 4½ inches long. The specimens were obtained by curettage.

After history not obtainable.

H. 481.—Columnar epithelioma.

Sections show highly irregular tubules, branching and with processes, lined by several layers of cells with large nuclei supported by a scanty, loose, slightly cellular stroma. In places the tubular arrangement tends to give place to an infiltrative process.

The specimen was received on 27th November, 1911.

Macroscopically the uterine cavity was occupied by a large friable mass, in places apparently extending nearly through the wall and looking malignant.

The patient was a single woman, 47 years old. Twelve months previously menstruation had ceased for four months, then came on slightly and stopped again. About ten weeks previously she had had phlebitis of the left leg. About eight weeks previously a severe flooding came on with great pain in the lower abdomen, and lasted seven to ten days. Ever since there had been a greyish discharge occasionally, blood-stained and somewhat offensive. There was loss of weight and evening rise of temperature and no appetite, the patient feeling ill generally.

September, 1914.—No recurrence; patient was alive and well.

H. 549.—Columnar epithelioma.

Microscopically a polypoid projection was found to consist of large, somewhat irregular tubules, lined with large more or less cylindrical cells in several layers, with deeply staining nuclei, leaving large lumina. This was supported by a scanty loose stroma containing some plasma cells. Sections of the cervix showed dense fibrous tissue infiltrated by masses of epithelial cells, showing in places a tendency to a tubular formation. There were out-lying small and large masses of closely packed cells, in a dense stroma, undergoing degeneration.

Sections of the uterus near the cervix showed definite highly irregular tubules in a dense stroma.

The stump of the cervix, removed three weeks later, showed granulation tissue only.

The patient was 40 years of age. The scrapings first submitted showed marked irregularity of the epithelium, and were apparently definitely malignant. The uterus and adnexa were then removed. Large fibroids were attached to the body distending the uterine cavity. This cavity was filled with irregular epithelial projections, soft but not friable. There was nothing definite in the cervix.

H. 1021.—Columnar epithelioma.

A section showed irregular often dilated tubules, lined by large cells in several layers with deeply staining nuclei, supported by a very loose, œdematous and vascular, often highly cellular, stroma.

Received on 9th December, 1913, from a married woman of 56 years. The uterus was somewhat enlarged; there had been bleedings from the vagina for nine months. A large amount of material was curetted away.

October, 1914.—Hysterectomy had been performed on 1st January, 1914. The entire body of the uterus was found very indurated. There was no glandular involvement. The patient died on 26th July, 1914, from peritonitis, and an appendicular abscess was found *post-mortem*. No other organs had been involved in the new growth.

H. 116.—Adenoma-carcinoma.

The uterus when laid open showed a ragged cauliflower-like growth occupying the whole of its interior. Through a small slit in the wall further masses projected externally. An ovarian cyst was present on one side and inside this were projecting cauliflower-like papillomatous masses.

Sections of the uterine growth showed irregular tubules beginning to invade the underlying tissues, with a small amount of stroma. There was some round-celled infiltration in advance of the growth. The ovarian papillomata showed a fibrous tissue basis, capped by cubical to columnar cells, one or two layers deep.

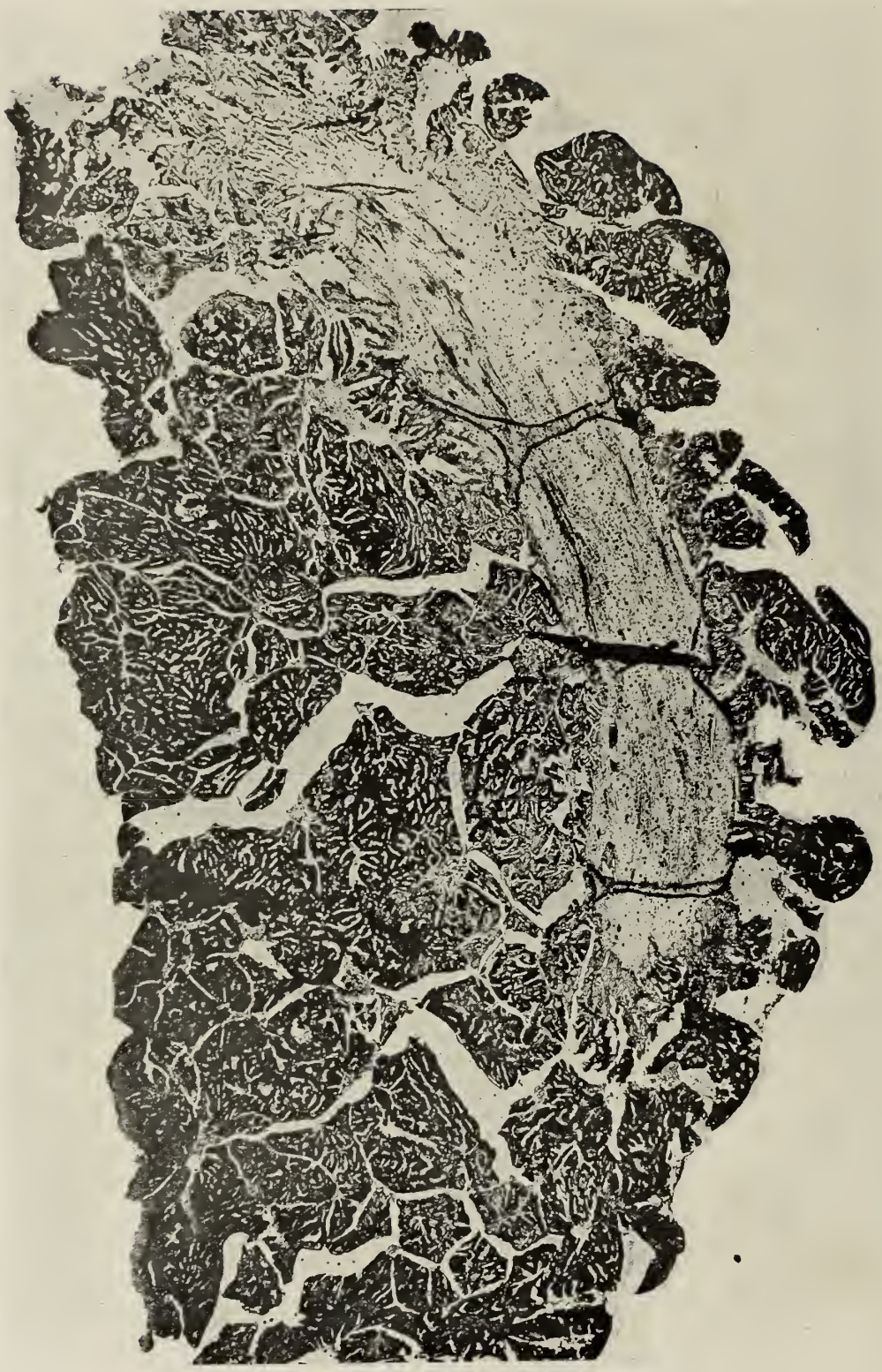
26th February, 1910.—The patient, a single woman, age 50 years, had had hæmorrhages for eight years and yet had not wasted and had fair strength. An ovarian cyst on the left side with portion of the pedicle was removed three years before, and there was no recurrence. At the present operation she had an ovarian cyst on the right side showing a papillary growth. There was no ascites. The duration of the symptoms, combined with the presence of myomata of the surface of the uterus, led Dr. Worrall to think that he had to deal with a multi-nodular myoma, and he therefore amputated the uterus instead of doing a total hysterectomy. He stated that the uterus was clinically the seat of adeno-carcinoma, and intended to remove the cervix also if this opinion was confirmed microscopically.

He points out that it is an interesting case as there were three neoplasms in the same pelvis. The cervix removed a few weeks later showed no evidence of extension of the new growth.

October, 1914.—Patient died on 1st July, 1910, from hæmoptysis, probably from recurrence in the lung. Nodules in the skin of the leg, back and nose, probably malignant (Dr. Delohery)—Dr. Worrall.

H 481.—Columnar Epithelioma (*Body of Uterus*).

Highly irregular tubules, branching and with processes, lined by several layers of cells with large nuclei supported by a scanty loose cellular stroma. In places the tubular arrangement tends to give place to an infiltrative one.



H 116.—Adeno-Carcinoma (*Body of Uterus*).
Irregular tubules beginning to invade the tissues. Small amount of stroma.

H. 459.—Adenoma-carcinoma.

Sections showed a solid growth consisting almost entirely of masses of epithelial cells compressed together, tall and columnar in places, arranged in a solid tubular form, supported by a scanty connective tissue framework. There was a tendency to leave a small lumen in the centre of the masses. The case was reported as being highly suggestive of columnar epithelioma.

The specimen was submitted on 23rd October, 1911, with a note that the patient "May have malignant disease of the body of the uterus."

September, 1914.—After receipt of the report the uterus had been subsequently removed. A fungating epithelioma was found in the cavity. There had been no recurrence, and the patient was now in good health.

H. 839.—Adenoma-carcinoma.

Sections showed irregular tubules closely packed together to form a solid growth, fenestrated with the openings of tubules. The cells were columnar, in several layers, with large nuclei. The stroma was slight with plasma cells and vessels.

H. 701.—Carcinoma.

A small fragment of uterine scrapings from a married woman showed isolated large malignant cells, with an indefinite tubular arrangement in places, supported by very little stroma.

H. 813.—Carcinoma.

Small fragments from the uterus showed a loose cellular stroma, extensively infiltrated by malignant cells with large nuclei, either singly or in small masses and showing no definite arrangement.

The material consisted of a small nodule from a married woman who had an extensive mass invading the uterus, omentum, &c.

H. 331.—? Malignant.

Much blood clot and fibrin. There were a few irregular branching and contorted tubules surrounded by some cellular stroma with a few plasma cells. The epithelial cells were normal and the nuclei mostly basal.

The specimen was received on 17th March, 1911. The massing together of the epithelial cells in places gave rise to the suggestion of a carcinoma, and such possibility was reported on.

The patient had a hard thickening of the inner wall of the cervix and the body of the uterus. She was 48 years old and had had four children and two miscarriages, the last miscarriage twelve years before. There had been a blood-stained discharge for about three months. She did not seem to have lost weight.

29th September, 1914.—The patient drifted to other doctors; for two years after the operation she had not been operated on again. She was then lost sight of.

The after history would seem to indicate that the case was not malignant.

Fibromyomata of the Uterus.

Of eighteen specimens submitted in this connection, seventeen call for no particular comment. They were mostly submitted for microscopical opinion as to the nature of some unusual appearance presented, more especially from the point of view of possible sarcomatous degeneration. In no instance was such a malignant condition detected microscopically. Several of the fibroids showed an œdematous infiltration and others extensive areas of necrosed tissue which stained poorly.

H. 346.—Uterus after disappearance of fibroids.

The patient had suffered from multiple fibroids for many years. She became pregnant and had a premature delivery four weeks previously, which was followed by rapid involution of the fibroids so that they were now barely discoverable. Hysterectomy was performed.

Macroscopically, the only unusual appearance was thick and branching vessels. Sections of the uterine wall showed an extensive uniformly pink area (eosin-stained) of degeneration with masses of degenerated cells, possibly polymorphonuclear, in places. No organisms were detected.

Conditions Associated with Pregnancy.

Thirty-one specimens have been examined which show evidence of connection with pregnancy. Of twenty-five of these little need be said, as they showed merely the presence of chorionic villi or decidual cells indicating a previous pregnancy. In a number of instances the specimens were submitted from cases in which malignancy or other pathological conditions were suspected, the possibility of pregnancy not having presented itself. In nearly all instances chorionic villi themselves were present occasionally decidual cells only. The chorionic villi varied in appearance according to whether the pregnancy was early with the connective tissue core more cellular, or pregnancy more advanced and the core denser and more fibrous-looking. In many cases the villi showed marked evidence of degeneration, and cutting off of their food supply was shown by their poor staining. One specimen was from an early ovum the size of a walnut—unfortunately the fœtus itself had disappeared. In some specimens there were fragments of uterine mucosa together with clot and villi. The uterine glands were usually very irregular and widely dilated in a cellular stroma, though in one specimen the glands were only somewhat irregular and moderately separated and approximately normal, but in this case the villi appeared to be degenerating. Occasionally specimens showed infiltration by leucocytes in the neighbourhood of the villi. *Hydatid*

Hydatid moles.—Three specimens came from typical hydatid moles; a fourth case—that of a married woman, aged 27 years, with one child thirteen months old—also had suffered from an hydatidiform mole. On 27th May, 1910, she had violent hæmorrhage from expulsion of this mole, which was possibly almost complete. Though she could only have been about three months pregnant, the uterus was the size of a six months' pregnancy. A chamber-pot was filled three-fourths full. The curetted material was submitted for examination. On 23rd June she had a sudden flooding. After rest in bed for a week with treatment she was allowed up, but bled again profusely. On 6th July she was curetted again and further specimens were submitted.

Neither of the specimens submitted showed microscopically definite evidence of hydatid mole or chorion-epithelioma. There were dilated glands in an œdematous stroma, as well as much round-celled and polymorphonuclear infiltration with small hæmorrhages. One section showed the stroma infiltrated in places by very large cells with large nuclei. These did not show more than one nucleus, and were probably really stroma cells enlarged from the pregnancy and not syncytial masses.

October, 1914.—The after history was that there was no evidence of any further development, and no recurrence, and the patient was alive and well.

Deciduoma malignum?—Specimens received on 16th October, 1912, were from a patient of 34 years who had had two children, the last a month before, and who had been bleeding for a fortnight. The diagnosis lay between a fibroid and deciduoma malignum. Sections showed the presence of chorionic villi and decidual cells. There appeared to be no signs of invasion of the uterine wall by the placental tissues.

October, 1914.—"Clinically this case could be considered from the symptoms and signs as deciduoma malignum and hysterectomy was thereupon performed. There had been no recurrence up to date; the patient was alive and well."

Non-malignant Conditions of the Cervix-Uteri.

Pathological conditions, apart from malignancy, in the cervix uteri may show themselves as affecting either the mucous glands, the supporting stroma, or the vessels. The cervical glands may be increased in number or diminished by fibrotic processes. They may show marked irregularity, or be dilated into small or even large cysts. They may erupt on to the surface displacing the squamous epithelium and presenting an eroded appearance. The stroma may show an accentuation of its normal fibrous condition, or it may be extensively infiltrated by round and plasma cells as the result of chronic irritative processes, or converted into a form of granulation tissue, or be much infiltrated by œdema and leucocytes in more acute infective conditions. The vascularity may be increased by a number of small vessels, or the arteries in the deeper parts may be very extensively fibrosed.

Details of Tissues from the Cervix.—Non-malignant.

(1) Stroma fibro-cellular, scattered glands.

H. 10.—Fibrosis with some dilated vessels. No glands seen. Submitted for malignancy.

H. 48.—Dilated follicles with some round celled infiltration and fibrosis.

Submitted on 30th July, 1909.

October, 1914.—The patient was in good health. Clinically the condition was definitely non-malignant. She was alive but suffered from cardiac dilatation.

H. 90.—Fibro-cellular stroma with moderate sized glands.

H. 96.—A dense stroma with scattered cells and numerous small vessels

Clinical diagnosis—cicatricial tissue resulting from laceration during child-birth.

H. 117.—Dense fibrosis with scattered elongated cells, thick vessels and a few small cysts.

11th February, 1910.—Patient 44 years old. A suspicious case of chronic endometritis or early malignancy.

October, 1914.—Patient could not be traced.

H. 127.—Dense fibrosis with far-scattered cells and a moderate number of vessels. The cells of the squamous epithelium are swollen.

H. 133.—Dense fibrosis with scattered cells and branching glands somewhat dilated, their distal parts surrounded by a more cellular stroma.

H. 213.—Posterior lip of cervix. Fibrosis with scattered elongated nuclei. Numerous glands somewhat dilated. Anterior lip the same, but more cellular near the surface.

From a married woman aged 40. Carcinoma suspected.

H. 244.—Fibrosis with scattered elongated cells, the glands numerous, some moderately dilated into small cysts, the stroma more cellular round the glands.

7th October, 1910.—"Mrs. A.," aged 51 years, bleeding almost continuously for four months. Possibility of malignancy considered.

October, 1914.—The patient had not been heard of since leaving the hospital, and so was presumably alive and well.

H. 245.—Fibrosis with elongated cells and thick vessels. The glands numerous, tortuous and somewhat dilated, the stroma more cellular round them.

H. 285.—Fibrosis with much thickening round the vessels. A few dilated glands. Tissue from the uterus showed some fibrosis with the glands a little dilated in a fibro-cellular matrix; in some places much dilated with a more cellular matrix and small hæmorrhages.

Patient

Patient curetted about eight times. Curetted and the cervix repaired about a year previously. No local or general treatment of any avail. Symptoms, constant loss of blood; the diagnosis, fibrosis of the uterus.

H. 287.—Fibrosis with elongated cells and rather thickened vessels.

H. 307.—Scattered, somewhat dilated, glands and a fibro-cellular stroma.

"Mrs. M.," aged 42 years.

H. 337.—Fibrosis with much thickened vessels and a few irregular glands.

Uterine scrapings also submitted, not malignant.

H. 442.—A fibro-cellular stroma with dilated irregular glands.

Malignancy suspected in the body of the cervix, but no sign of malignancy detected in the body.

H. 602.—Fibrosis with irregular branching glands and thick vessels some distance below the surface, with a small circular area filled with degenerated cells of doubtful origin.

Submitted for examination for malignant disease.

H. 686.—A fibro-cellular stroma with very thick vessels.

"Mrs."—Possible malignant disease.

H. 789.—Fibrous tissue and round cells.

Suspicions of malignancy.

H. 815.—Surface epithelium thickened and a little irregular. Dense fibrosis with very thick vessels, glands moderately dilated. Uterine scrapings show numerous sprouting glands, some a little dilated, close together in a cellular œdematous stroma.

Submitted for suspected malignant disease.

H. 894.—Fibrosis with irregular glands and very thick vessels.

H. 944.—Dense fibrosis with a few cells and a few isolated glands in the stroma. Vessels thick.

Malignancy suspected.

H. 994.—Fibrosis. Tissue very small.

(2) Round-celled infiltration in places, showing the presence of an irritative process.

H. 76.—Some glands, a little dilated, in a dense fibrous cellular stroma with vessels with thick walls. Marked round-celled infiltration near the surface at one point.

5th November, 1909.—An old patient about ten years past the menopause, suffering from prolapse for about two months. The cervix was found prolapsed about one inch out of the vulva. It was thickened and had an ulceration round the margin. The patient had had an offensive discharge and a little hæmorrhage three days before being seen. The uterus was replaced and the ulceration then disappeared, but the cervix appeared too large and hard. A piece was cut out.

October, 1914.—Patient alive. Cause of ulceration, friction on a prolapsed uterus.

H. 86.—Dense fibrosis, somewhat cellular, with thick vessels; glands moderately dilated with some round and polymorphonuclear cells round some of them.

25th November, 1909.—Widow, aged 45 years. Suffers from prolapse. The whole cervix much enlarged and thickened. Practically no ulceration, but what there is is apparently due to prolapse. Considered probably non-malignant.

14th December, 1914.—Patient was seen occasionally for a few years afterwards, but had not been seen for the last two years. Microscopic diagnosis apparently correct.

H. 272.—Dense fibrosis with a moderate number of vessels and no glands. Much small-celled infiltration in places near the surface epithelium.

H. 279.—Fibrosis with moderate sized vascular channels. Groups of round and plasma cells infiltrating near the surface in places.

December, 1910.—Specimen submitted.

October, 1914.—The clinical evidence supported the microscopical diagnosis. The patient was well.

H. 847.—Considerable round and spindle-celled infiltration with fibrosis below the surface epithelium. A moderate number of branching glands. Deeper vessels thickened.

Submitted for malignant disease.

(3) Evidence of a more or less acute inflammatory process.

H. 62.—Extensive round-celled, plasma-celled and some polymorphonuclear infiltration round the glands, some of them with leucocytes in their lumina. All the vessels filled with blood and some blood extravasations.

Clinically, an ulcer of the cervix thought to be malignant.

H. 103.—The squamous epithelium is thickened. No glands were detected. There was very extensive leucocytic infiltration. The vessels were thick.

H. 205.—Extensive plasma, round and some polymorphonuclear infiltration under the surface epithelium and round the glands.

Patient, 39 years old. A warty-looking growth on the cervix.

H. 398.—An œdematous-looking stroma much infiltrated with leucocytes with fairly numerous vessels and some large cells like those of granulation tissue.

"Mrs. S."—Cervix amputated six months previously. Submitted for any evidence of malignancy. H. 643.

H. 643.—Fibrosis with very thick vessels in the deeper parts. The surface epithelium is thickened and a little irregular. There is an extensive round-celled infiltration in some places with some leucocytes. Plasma-celled masses are infiltrating the fibrous stroma.

This case is of considerable interest. It appears to have been diagnosed as a cancerous cervix, and cultures were made from the cervix for the purpose of preparing a vaccine before hysterectomy. A mixed *Staphylococci auerus* and *albus* vaccine was prepared. When the uterus was removed the accompanying note stated "I think it is an epithelioma of the cervix." The cervix was hard and in one part showed some ulceration, and sections were taken from this ulcerated part. Over the site of the ulceration, the sections showed that the epithelium had disappeared, or nearly so, and that there was a dense accumulation of round cells in this area. The diagnosis was made of chronic ulceration of the cervix of a non-malignant character.

H. 790.—Areas of round cells in a fibrous stroma, vessels thickened. Considerable areas of granulation tissue in places.

Patient. "Mrs. G.," aged 42 years; baby twenty-one years ago after a bad confinement; four or five miscarriages since, always about the fourth month, the last fourteen or fifteen years previously. No pregnancy since. Bleeding a little each day for the last twelve months; does not think she has lost weight.

The cervix was granular and eroded and easily bled on pressure, and was somewhat adherent to the posterior wall of the vagina.

H. 854.—Surface epithelium thickened, defective at one small spot leaving a base of granulation tissue. The rest shows fibrosis with irregular glands, some dilated into small cysts.

Patient "Mrs. B.," malignancy detected.

H. 887.—Surface epithelium with vacuolated cells and infiltrated with occasional leucocytes; blood extravasations in the fibro-cellular stroma below this; vessels thick. Other scrapings, said to come from the cervix, show numerous irregular, closely packed, often dilated, glands in a loose cellular stroma.

Patient, aged 43 years; three children.

The cervix was large, florid, everted, and felt hard and slightly nodular; bled on the slightest touch. Considered probably inflammatory hyperplasia with possible malignancy.

H. 890. Branching glands in a fibro-cellular stroma. In one place the glands open on to the surface, leaving papillary projections, and are surrounded by granulation tissue.

H. 891.—A fibrous to fibro-cellular matrix with irregular glands and thick vessels, the glands opening on to the surface in one place. In places under the epithelium there are areas of round, plasma and polymorphonuclear-celled infiltration and granulation tissue.

H. 904.—Superficially shows a loose cellular granulation tissue with plasma cells, and in places numerous desquamating glands. In other parts the condition is more fibrous under the squamous epithelium. Deeper down there is fibrosis with thickened vessels.

The cervix was soft, spongy and eroded. It did not look malignant, but was amputated for examination.

H. 927.—Squamous epithelium thickened and a little irregular. Very large irregular glands, some dilated into moderately large cysts. Squamous epithelium forms part of the wall of one of these glands near the surface. The stroma abundant and cellular with numerous plasma cells.

H. 979.—Numerous irregular branching glands surrounded by a fibro-cellular stroma. In the deeper part the tubules are surrounded by masses of round cells and many degenerated cells.

This case was considered microscopically when originally examined as showing a tendency to malignancy.

(4) Glands apparently increased in number and irregular.

H. 252.—Numerous irregular, moderately dilated glands in a fibro-cellular stroma.

8th November, 1910.—Considered clinically either a severe erosion or commencing epithelioma; medical attendant inclined to the latter.

10th Feburary, 1911.—"The result of treatment shows this to have been a severe case of erosion of the cervix but not malignant."

October, 1914.—Patient had left the district after treatment, and could not be further traced.

H. 291.—Glands numerous, irregular and somewhat dilated. The squamous cells swollen. Stroma fibrosed in the deeper parts, more cellular near the surface.

H. 336.—Fibrosis with scattered cells, vessels rather thickened and fibrosis especially dense round them. Glands numerous, more or less dilated; some filled with granular exudate and desquamated cells with most of the cells of the walls degenerated; others with little exudate and well-preserved lining cells. A small area of round-celled infiltration just below the surface epithelium.

Age 38 years. Suffering from irregular menstruation, periods lasting 10 to 14 days. Cervix much enlarged, soft, with eversion of the mucous membrane and a number of polypoid masses the size of peas and cherries. Uterus enlarged, soft, smooth-walled, retroverted but movable, left ovary enlarged, cystic. Cervix amputated (3rd April, 1911). Microscopical examination as above. Fourteen

Fourteen weeks later, profuse hæmorrhage. The speculum caused free bleeding. "During the period of about a month, hands, feet and face became puffed a good deal" (urine normal).

October 7, 1911.—Hysterectomy. Large cystic ovary the size of a mandarin orange. Recovery excellent. Sections of the cervix (H. 448) show moderately large cystic spaces and at one spot an irregularity of the squamous epithelium which dips down and is not sharply limited. Uterine scrapings (H. 454) show remains of glands in a cellular stroma.

October, 1914.—Patient alive and well.

H. 545.—Numerous irregular glands, long and tubular in one part, in a fibro-cellular stroma. Surface epithelium a little thickened.

H. 612.—Numerous branching well-formed glands in a fibro-cellular stroma. Vessels very thick-walled. Collections of round cells in places.

Cervix the site of intractable ulceration for some time. A wedge excised on suspicion of malignancy supervening.

H. 737.—Numerous glands, somewhat irregular, in a fibro-cellular matrix. Some of the glands dilated and filled with exudate, and the lining cells degenerated. Numerous small vessels.

"Mrs. I.," aged 45 years, for malignancy.

H. 970.—Surface epithelium with swollen cells; a number of dilated and irregular glands, with a loose-celled stroma under the surface and around the glands. Thick-walled vessels.

Patient, aged 45 years. History suggesting malignancy.

H. 995.—Irregular intricate glands in a loose, œdematous cellular stroma with thin vessels.

Submitted for special opinion as to malignancy. Considered microscopically not definitely suspicious.

(5) Glands dilated into micro-cysts the chief feature.

H. 327.—Fibrosis with thickened vessels and large micro-cysts, filled with an exudate, whose lining cells have disappeared.

H. 350.—Fibrosis with scattered cells and large irregular micro-cysts; the stroma much more cellular between some of the cysts and the surface.

Age 43 years. Submitted for evidence of malignancy.

H. 407.—A large micro-cyst with a flattened epithelial wall pressing on the surface epithelium. Cells of the surface epithelium swollen.

A nodular outgrowth from the cervix.

H. 652.—Several large micro-cysts in a fibrosed stroma with few cells.

Malignancy suspected.

H. 741.—Surface epithelium thickened and a little irregular. Collections of round cells in places below the surface. Several large micro-cysts and a few isolated glands surrounded by fairly dense fibrous tissue with thick vessels.

The specimen consisted of a snipping from a growth of the posterior lip of the cervix which was small and pea-like and of firm consistency, not fungating and without any induration around.

H. 889.—Branching glands in a fibro-cellular stroma, some dilated into large micro-cysts.

(6) Glands forming villous processes.

H. 980.—Glands opening on to the surface to form villous processes, some very vascular with a core of loose, œdematous, cellular connective tissue which also surrounds the adjoining glands.

H. 988.—Numerous irregular, often dilated glands sometimes opening on to the surface, with the surface epithelium defective, surrounded by a loose cellular stroma with a moderate number of vessels.

Patient, aged 31 years. Cervix apparently somewhat enlarged, and with a certain amount of excoriation.

H. 619.—Irregular branching glands, forming villous processes, in a fibro-cellular stroma with numerous vessels.

Considered a polypoid growth with chronic inflammation.

From a married nulliparous woman, aged 48 years.

(7) Myofibroma of the cervix uteri.

H. 752.—This was a typical myofibroma, and was a large, white fibrotic mass the size of a tennis ball on the cervix uteri of a married woman.

Malignant Conditions of the Cervix uteri.

Specimens from the cervix uteri have been submitted in seventy-eight cases. In twenty instances the diagnosis of malignancy was made. In the majority of cases these were more or less typical squamous epitheliomata. Though the general impression left upon one's mind is that all squamous epitheliomata of this region are very much like each other, consecutive examination of a series such as the present at once shows that hardly two cases are exactly alike, and that in many instances squamous epitheliomata, undoubtedly typical, differ widely in general appearances. It is of especial interest to know that such varying appearances occur in such a uniformly fibrous structure as the cervix uteri, thus showing that the differences in type of growths

of

of this nature are dependent on the intrinsic characters of the specific cells rather than on the nature of the tissues in which the growths occur. In other words, it may be said that the cells of the new growth govern and direct, more or less entirely, the behaviour of the surrounding stroma. In the Reports of the Imperial Cancer Research Fund special reference is made to this feature in connection with carcinomata of the mammary gland of mice.

The differences presented by these squamous epitheliomata may be considered from two aspects, the first bearing reference to the characters of the epithelial cells and their arrangement in larger or smaller masses, the other dealing with the reaction in the stroma, which may vary from a dense fibrosis to a tissue rich in chronic reactional cells.

Characters of the epithelial cells and cell masses.—In one instance the appearance of the cells and cell masses may be considered as analagous to a scirrhous carcinoma of the breast. The growth showed the presence of narrow columns of somewhat small epithelial cells surrounded by a dense stroma. In spite of the denseness of this stroma, however, it seemed evident that, just as in the case of scirrhous carcinoma of the breast, the fibrosis either followed too late the growth of the epitheliomatous cells, or else was ineffective against their advance so as to enable the host to overcome the progress of the malignant growth. The commonest type of arrangement of the cells is in more or less rounded or lobed masses invading the tissues, the peripheral cells being frequently crowded together so as to form a darker edging to the island of growth. In some instances the central cells had undergone keratinisation so that more or less definite cell nests were formed or in progress of formation. In other instances the centres of large masses had undergone degeneration so as to form small cystic spaces. This is probably due to the large size of the masses cutting off the supply of nourishment to the central cells.

A still further arrangement of the epithelial cells is seen in what may be called massive invasion. This massive invasion may either consist of huge solid masses of cells separated by a small amount of stroma or of a kind of dense infiltration in which individual cells or small groups seem to lie in the meshes of a finer reticulum. In one instance the general appearance of the growth was that of a tubular carcinoma; the cells lining the irregular tubular elongations were small epithelial cells lying in several layers suggesting an origin either from the squamous epithelium or perhaps rather from that part which occupies the orifices of the glands of the cervix. In examining sections of the cervix the gradations of the squamous epithelium into the columnar epithelium of the glands of this part can often be made out at the orifices of these structures; and it may be presumed that an epithelium beginning in this situation would carry with it a tendency to present a tubular arrangement and that the cells lining these tubules partake to some extent of the characters of squamous epithelium. This is the interpretation we place upon these particular specimens.

In one other instance, in the midst of much blood clot and fibrin, was an extensive infiltration of moderately large malignant cells. This was also probably an aberrant form of epithelial tumour, which resembles somewhat in its arrangement a sarcoma.

Characters of the Stroma.—Reference has already been made to the case in which extensive fibrosis suggested analogies with scirrhous carcinoma of the breast. The stroma in general, in the other types of epithelioma, varies from fibrosis approaching this type, to a cellular condition in which plasma cells abound in a stroma whose fibrous character varies to a greater or less extent. Very often, surrounding the epithelial columns, plasma cells are exceedingly numerous showing the chronic irritative effects of these invading processes. In the solid type of epithelioma mentioned above, large masses of cells are associated more or less closely with vascular spaces, the cells being arranged in juxtaposition to them, a thin stroma separating the lumen from the cells. Probably this proximity of a nourishing fluid, either lymph or blood, enables these large masses to continue growing without degenerating. In the other type of diffuse infiltration, the stroma which permeates the whole structure is indefinite and it is hard to distinguish its elements from those of the invading malignant cells.

It will be seen from these descriptions of the stroma that there are four features to be considered, viz. (1) the amount of fibrosed tissue present, (2) the degree of plasma— or round-celled infiltration, (3) the vascular arrangement, and (4) the general scaffolding.

Details of Cases of Malignant Disease of the Cervix.

Squamous epitheliomata showing rounded or lobed invading masses.

H. 57.—Large-lobed masses, the outermost layers of cells being more columnar and with a tendency to degenerate in the centre of the mass. No cell nests or prickle cells; division figures fairly numerous. The epithliomatous masses are surrounded by numerous plasma cells and are invading a fibrosed tissue containing cervical glands, though the growth has not yet reached these.

From an eroded cervix submitted for suspected malignant disease.

H. 70.—Narrow columns of squamous epithelioma showing attempts at cell nests and small cystic spaces. Stroma shows dense fibrosis with, in places, many round and connective tissue cells.

A large friable growth apparently chiefly between the junction of the cervix and body.

H. 91.—An extensive growth, without prickle cells or cell nests, but with numerous mitoses, with fibrosis and round-celled infiltration between the epitheliomatous masses, but no definite plasma cells.

Tissue

H. 70.—Squamous Epithelioma (*Cervix.*)

Narrow columns. Dense fibrosis.

H. 91.—Squamous Epithelioma *(Cervix.)*

Extensive growth with fibrosis and round cells between. No definite plasma cells.

H 634.— Squamous Epithelioma (*Cervix*).
Extensive juicy masses with a little stroma consisting of fibrous trabeculæ with vessel spaces.

H 920.—Squamous Epithelioma (*Cervix*).

Large masses (X) in a fibro-cellular stroma. Condensations of nuclei at peripheries of the masses.

H. 862.—Squamous Epithelioma (*Cervix*).

Squamous-celled masses, degenerated in their centres to form cysts, in a fibrous stroma with plasma cells.

H. 324.—Early Squamous Epithelioma (*Cervix*).

Columns of squamous epithelium, tending to form cell-nests, invading a chronic inflammatory tissue with scattered round cells.

H 708.—Squamous Epithelioma (*Cervix*).
Nearly all irregular cells. Cells degenerated. Very little stroma.

H 708.—Squamous Epithelioma (*Cervix*).
Nearly all irregular cells. Cells degenerated. Very little stroma.

Tissue from the para-metrium showed fibrosis but no malignancy. A small lymph gland attached to it showed no evidence of new growth.

"Mrs. W."—Submitted for suspected malignancy.

H. 138.—Extensively infiltrated by various-sized columns in which epithelial cells are often arranged round a central lumen containing the granular contents of degenerated cells. No prickle cells and no cell nests. A few round cells round the columns.

H. 234.—Large masses of juicy cells tending to form cell nests with very little supporting tissue.

H. 264.—Epithelial columns surrounded by rounded cells and invading the deeper tissues. Many leucocytes between and around the epithelial masses.

From an ulcerated area of the cervix in "Mrs. C.," aged 57 years. This was clinically so suspicious that the patient was advised to have an operation performed before waiting for the microscopical diagnosis.

H. 335.—Juicy masses of cells traversing a vascular cellular matrix with large cells. Some leucocytic and round-celled infiltration.

Clinically considered malignant.

H. 587.—"Scrapings from the uterus" showing a tissue consisting chiefly of masses of epithelial cells, prickle cells and cell nests not being seen.

Macroscopically the scrapings submitted resembled placental tissue.

H. 684.—Extensive juicy masses with little stroma consisting of fibrous trabeculæ with vessel spaces.

H. 920.—Large masses of epitheliomatous cells showing little tendency to cell-nest formation, and showing finger-like processes extending downwards surrounding a lumen. Appearance somewhat suggesting a rodent ulcer. The masses show a condensation of nuclei at their peripheries. They are surrounded by a fibro-cellular stroma.

"Mrs. C.," aged 69 years.—History of one year's duration with progressive loss of weight of 3 stone. Vaginal discharge offensive and bloody during the past five months. Abdominal panhysterectomy was performed. The uterus was dilated and thin walled, and contained a large quantity of reddish-grey extremely offensive fluid. (Dr Chenhall.)

The specimen received showed an extensive fungating ulceration of the cervix with the uterus distended with an offensive turbid fluid and containing a fibroid in its wall.

Squamous epitheliomata showing formation of small cysts by degeneration.

H. 428.—Large epitheliomatous masses degenerated in the centre to form cysts; cell nests present.

From a patient with a prolapsed uterus for seven years, now showing a sloughing ulcer which looked malignant.

H. 862.—Epitheliomatous masses degenerating in the centre to form cysts, supported by a fibrous stroma with plasma cells.

Squamous epitheliomata with cell-nest formations.

H. 199.—Epitheliomatous masses with definite cell-nests and round-celled infiltration between.

Patient, aged 37 years. Intermittent bleeding for seven months. Cervix much ulcerated, the condition too extensive for operation.

H. 324.—An early squamous epithelioma showing a definite slight down-growth of epithelial columns in which prickle cells are recognisable as well as several imperfect cell-nests. Numerous polymorphonuclear and round cells are present. In another portion of the cervix are a number of slightly dilated cervical glands.

10th March, 1911.—A small nodule from the cervix of a middle-aged woman.

September, 1914.—A high amputation of the cervix was performed on receipt of the report. The patient had had no apparent recurrence, and was alive and well.

H. 711.—Micro-cysts abundant. There is a slight down-growth with cell-nests from the squamous epithelium into a fibrous stroma.

The specimen was reported on as being highly suggestive of commencing epithelioma.

Malignant growths consisting of diffusely infiltrating irregular cells.

H. 708.—Composed almost entirely of irregular malignant cells, degenerated, supported by very little stroma. The cells were considered of squamous origin.

Patient, a sallow woman, 27 years of age. Metrorrhagia for the past three months; backache and headache; has become much weaker, tired and thinner. Married seven years but has not conceived. On examination the uterus was fairly large for a non-parous woman. The cervical os was ulcerated, especially to the left, and felt like a badly-ulcerated cervix with abundant granulation tissue covering the tear; bled readily on manipulation; no offensive odour.

H. 993.—The tissue is much degenerated and consists chiefly of large cells with large vesicular nuclei containing nucleoli. The cells are apparently separated by a fine reticulum in places; some of the cells are mitosing. The vessel walls seem in places to be composed of these malignant cells. There are large degenerated areas in places and also blood clot.

In reporting on this tissue it was stated that it was undoubtedly malignant; the type was not certain. "It seems to conform more closely to a large round-celled sarcoma than a carcinoma, though the cells are more carcinomatous in appearance than sarcomatous."

No clinical details are available and no information was obtained as to whether there was any possible connection with a pregnancy or whether the tissue actually came from the cervix or from the interior of the uterus.

Squamous epithelioma approaching the columnar type.

H. 759.—Large epithelial cells with large nuclei, some mitosing, arranged often in several layers round irregular tubular spaces. The epithelial cells look as if they had a tendency to form keratin, the periphery of the larger having a condensed ring. No cell nests or prickle cells seen. The stroma was highly vascular with large blood spaces.

From a fungating growth of the cervix uteri of a married woman.

In reporting on this specimen it was stated that the condition was epitheliomatous and that the cells appeared to show a transitional stage between squamous and columnar epithelioma.

Epithelioma of the cervix after cauterisation.

H. 130.—The cervix showed fibrosis and no squamous epithelial cells at all in the sections made. On one side the tissue was degenerated and stained poorly. A large lymph gland from the fork of the common iliac vessels showed very conspicuous germ centres and fibrous septa but no squamous epithelioma. A small lymph gland from the fork of the common iliac vessels resembled the large gland and also had scattered plasma cells.

The specimens were from a patient, "Mrs. M.," aged 41 years, who had had eight children. She had had a crateriform cancer of the cervix which had been burnt out with caustic. This had been removed a month. The uterus was removed and extensive infiltration of the body of the uterus was present.

The cervical portion mentioned above and the lymph glands do not now show epitheliomatous infiltration.

Doubtful squamous epithelioma.

H. 223.—The specimen submitted was very poor, but showed large masses of epithelial cells, and was reported on as showing a microscopic appearance suggestive of a squamous epithelioma.

22nd August, 1910.—Submitted from a case "with every appearance of carcinoma of the cervix."

October, 1914.—The medical attendant was unable to trace the case, but does not think the condition could have been malignant.

Pathological Conditions of the Vagina.

Sixteen specimens have been submitted from various portions of the vaginal canal and adjacent parts. The following are the most interesting from amongst them :—

Squamous epithelioma involving the right labium minus.

H. 123.—Sections show large masses with marked cell nests surrounded by considerable round-celled infiltration and separated by a fibrous stroma. Lymphatic glands in the right and left inguinal regions show no epithelioma although there was some fibrosis.

Macrospocically, irregular ulceration the size of a shilling on the vulva, the growth apparently extending deeply and being friable.

Patient, aged 63 years. The growth involved the right labium minus. There was a history of nine months' growth, the first sign being a small crack on the vulva accompanied by intense irritation.

Squamous epithelioma of vulva.

H. 423.—Sections of the ulcer show typical epithelioma with some small cell nests. In the glands of the groin there was also typical squamous epithelioma with some very large old cell nests surrounded by plasma cells.

Macroscopically there was extensive somewhat superficial ulceration. The glands of the groin were much enlarged, whitish and malignant looking.

Patient, "Mrs. D.," with an ulcer of the perineum and of the right labia involving the clitoris and vestibule, with leucoplakia of the skin of the vulva. Duration, seventeen months. There had been much treatment by lotions, operations, X-rays, &c. "The question is what is the nature of the growth; is the enlargement of the glands due to metastasis of the growth or inflammatory? To me, macroscopically, ulcerations and glands seem malignant." (Dr. Worrall.)

Squamous epithelioma of vulva.

H. 520.—There is very marked thickening of the surface epithelium which extends downwards in somewhat irregular processes, in which are occasional definite cell nests. The epithelial columns are surrounded by some round and plasma cells which infiltrate for some distance the subjacent fibrous stroma, and occur deeper still as outlying masses. The original microscopical report stated that there was considerable thickening of the epithelium with cell nests, but no definite evidence of malignancy. Unfortunately there is no history or after-history connected with the specimens, but a re-examination shows apparently unmistakable squamous epithelioma.

Squamous

H. 759.—Epithelioma (*Cervix*).

Columnar arrangement, probably composed of layers of squames.

H. 123.—Squamous Epithelioma (*Vulva*).

Cell-nests with much round-celled infiltration.

Squamous epithelioma of the vaginal wall.

H. 528.—The tissue is extensively invaded by large irregular masses of epithelial cells, some showing a fair number of mitoses. There are a few doubtful prickle cells but no keratinisation. The malignant masses are surrounded by a few plasma cells, and in places by collections of leucocytes.

Macroscopically there was a soft warty-looking mass the size of a small hen's egg.

Patient, "Mrs. E.," aged 49 years. A tumour of five months' growth removed from the vaginal wall.

Squamous epithelioma invading the vaginal wall after panhysterectomy for malignant disease of the cervix.

H. 567.—Sections show masses of epithelial cells without cell nests in a fibrous stroma cellular in places.

A portion of the cervix was curetted in May, 1910, and the specimens from the vaginal cicatrix were submitted on 15th April, 1912.

An enormous pendulous loose fibroma of the labium majus.

H. 140.—This was an enormous growth considerably bigger than a large human head, and consisted of a fibroma containing elongated cells.

Hypertrophic labium minus.

H. 696.—The squamous epithelium was perhaps slightly irregular. The subjacent tissue consisted of a loose œdematous-looking fibrous structure with enormous vessels.

The patient had suffered from intractable pruritus; vulval douches, lotions, &c., had given no relief. There was some leucorrhœa; both labia minora were large and covered with raised ridges. It was suggested that these ridges might be the cause of the pruritus and the cicatrices have arisen from scratching.

Abscess cavity (?).

H. 678.—A cavity with a loose cellular granulation tissue. This was submitted as a cyst from the vaginal wall and was probably an abscess cavity.

Exfoliation of the squamous epithelium of the vagina.

H. 100 and H. 957.—Two instances of abundant casts composed almost entirely of membranous masses consisting of squamous epithelial cells have been submitted.

I first called attention to this condition in an article in the *Australasian Medical Gazette* of 21st June, 1909, and pointed out that such a condition followed the use of certain pessaries. The pessaries examined in this connection consisted as a rule of mixtures of alum and boracic acid, and it would appear that the alum was the factor responsible for the shedding off in large masses of the surface epithelium. The masses are so abundant that the patients very soon, in some cases, have a pickle-bottle full of pieces of membrane, which they believe to be "corruption" coming away from the uterus or adjacent parts. Naturally, such results after the use of these pessaries have a very profound effect upon the patients in whom they occur. Recently in this State, under the Pure Foods Act, a prohibition against a firm supplying these pessaries was successfully instituted in spite of an appeal to the Court. The following extract from the *British Medical Journal* of 6th June, 1914, p. 1263, shows that the use of alum pessaries has been employed with the same object in view in other parts of the world. The article is entitled "Uterine Fibroids and Quackery," and reads:—

> The results of surgical interference with uterine fibromata have so enormously improved in the past ten years that the tendency to defer such treatment until it becomes absolutely imperative is much less common than formerly. Nevertheless, since many fibroids if they do not remain actually dormant are unassociated with hæmorrhage or marked pressure symptoms, it is not surprising that we still hear of quackery in relation to the management of the malady in question. Dr. Le Lorier has recently exposed (*Bulletins de la Soc. d'Obstet. et de Gynéc de Paris*, April, 1913, page 318) the practices of at least one French charlatan, which may yet be imported into the United Kingdom. A lady, before deciding to undergo operation, was advised to use a powder, which Dr. Le Lorier found to be alum. Great rags of tissue were discharged after injections, and she felt sure that they represented the tumour coming away bit by bit. In reality they were extensive exfoliations of the vaginal mucosa, with the rugæ well marked. Dr. Le Lorier reports an even more remarkable experience. He was consulted by a lady who was clearly suffering from an ovarian cyst. It was increasing rapidly, and he advised operation. The patient, however, put herself under a chemist, who prescribed injections with a white powder—alum. She came back after a few months, and triumphantly exhibited a big bottle full of ragged tissue, declaring that she had passed ever so much more, and that the tumour was coming away beautifully. The tissue was exfoliated vaginal mucous membrane. The small amount of discomfort apparently caused by the vaginal injections of very strong solutions of alum and zinc is remarkable. Two casts consisting of the epithelium of the vaginal mucosa are preserved in the museum of the Royal College of Surgeons of England. More than fifty similar casts had come away from the same person within one year after the repeated application of a quack remedy.

Chorion epithelioma (?) of the vaginal wall.

H. 400.—The tissue consists of large vesicular or vacuolated cells with moderately large nuclei, in places in small columns separated by a delicate fibrous tissue, in other places more scattered in a cellular connective tissue. Several syncytial-like masses were also seen, one apparently in a vessel. Some small hæmorrhages had occurred into the masses of vesicular cells.

This growth was considered a chorion-epithelioma showing the presence of masses of cells like those of Langhan's layer with a few syncytal masses.

From a patient, aged 49, with symptoms of hæmorrhage.

Ovaries.

Specimens from twenty-eight ovaries are included in these examinations.

Fibrosis and Microcysts.—The chief pathological feature in five of the ovaries was an increased fibrosis often accompanied by thickened vessels and sometimes associated with microcysts.

Ovarian abscess.—The wall of an ovarian abscess infiltrated with degenerating leucocytes was submitted.

Corpora lutea.—In four instances "small growths" composed of lutein cells, fibrin and exudate, were the chief feature for which the specimens were submitted. Some of these corpora lutea were the size of almonds.

Fibromata.—Three ovaries showed the presence of fibromata. In one, the growth was $4\frac{1}{4}$ x 3 inches, dense and fibrous, microscopically showing whorled spindle-shaped connective tissue cells and fibrous tissue.

Proliferating Ovarian Cysts (Cystadenomata.)—Of five ovarian cysts submitted two were malignant in type and three simple. It must be borne in mind that cysts of this nature labelled "simple" are still often potentially malignant.

In three other cases papillomatous growths were submitted associated with ovarian cysts.

Carcinoma of the Ovary.—The specimen came from a girl of 10 years, and consisted of a large, slightly irregular tumour, about 4 inches by 3 inches in size, purple to yellowish-white in colour, covered with a smooth peritoneal surface, except over an area of about $1\frac{1}{2}$ inches by $1\frac{1}{2}$ inches where this had been denuded. On section it varied from whitish to reddish, showing in some parts apparently definite blood extravasations, whilst other parts appeared degenerated and necrotic. Towards the periphery were some small, collapsed, cystic cavities half an inch or more in diameter.

Microscopic section showed that the growth consisted of closely-packed masses of epithelial cells with large vesicular nuclei and a certain amount of fibrous stroma. Amongst some of the cells were rounded spaces, as if these had been occupied by some degenerated product. There appeared to be a fairly thick connective tissue capsule, which had not been invaded by malignant cells, on the external surface.

Dermoid cyst containing cerebral substance.—This very interesting case was reported in the Second Report of the Government Bureau of Microbiology, page 110, and in the *Australasian Medical Gazette*, 1910, vol. 29, p. 235. Besides containing fatty matter, hairs, perfect teeth and sebaceous glands, bone was also present as well as cerebral tissue and some melanin, the latter suggesting the presence of the choroid of the eye.

Teratoma.—The specimen consisted of a large irregular nodular growth. On section the growth was found occupied by irregular-sized masses rather suggestive of a malignant growth, and apparently a certain amount of colloid material. Microscopic sections showed, irregularly distributed throughout the growth, such diverse structures as squamous epithelium, tall columnar epithelium in tubules, masses of cartilage, bone, and ordinary fibrous tissue.

An ovary in a hernial sac.—The specimen was removed from a hernial sac in the left inguinal canal in a child of 8 months.

Fallopian Tubes.

Inflammatory and Fibrotic.

Thirteen Fallopian tubes have undergone examination. Six of the tubes are classifiable under the headings—Inflammatory and Fibrotic. Some showed round-celled infiltration indicating a more fibrotic process, and others an acuter inflammatory condition, with polymorphonuclear infiltration, in one case associated with pyo-salpynx. Four showed no changes of any particular moment.

Tuberculosis.

One case was an instance of tuberculosis.

Blood sacs near Fallopian tubes.

In two instances specimens of this nature were submitted. A search was made, but unsuccessfully, for the presence of chorionic villi.

Division IV.—Parasites.

10. HYDATIDS (ECHINOCOCCI).

(J. B. Cleland.)

During the year specimens from twenty-seven cases were submitted for the purpose of ascertaining the presence of hydatid membrane, scolices or booklets. With one exception—portion of the liver of an ox in which small hydatid cysts were present—all these cases were human ones. In four of the twenty-six human cases the presence of hydatid membrane was detected. In two of these cases the hydatid membrane had been coughed up. One was a boy of 11 years from the Cessnock District Hospital, and the other a schoolboy from Mungindi. In another case laminated hydatid membrane was passed in the urine. The patient had had old-standing renal colic followed by the passage of shreds in the urine, which shreds proved to be hydatid membrane. The left kidney was the size of a cocoanut. The fourth case came from a man, but there was no information as to the site. In seventeen other cases—all negative—the material submitted was sputum. The requests accompanying the specimens, as a rule, were for a search for the evidence of hydatid disease as well as for tubercle bacilli.

11. BILHARZIASIS.

(J. B. Cleland.)

In the Annual Report for 1914 reference is made to the finding of *Bilharzia* ova in February in the urine of a man who had contracted infection during the South African war. In another case *Bilharzia* ova were also detected during that year. This specimen was submitted in November, and the disease had also been contracted during the South African war. This particular patient had been under observation by us from 4th December, 1908, to 1st April, 1909, during which period *Bilharzia* ova had been found in abundance. As indigenous cases of *Bilharzia* infection are not known in New South Wales, both these cases must have retained their infection since their return from South Africa after the Boer War.

12. A YOUNG SLUG COUGHED UP.

(J. B. Cleland.)

In December an inmate of the Rookwood State Hospital and Asylum is said to have coughed up the specimen submitted. This proved to be a garden slug, probably a young *Limax maximus*, as identified by Mr. C. Hedley, of the Australian Museum. This specimen, if it was really "coughed up" by the patient concerned, was probably dislodged either from the stomach or the back of the throat, the young slug having been ingested with lettuce or similar material.

13. NOTES ON INSECTS.

(E. W. Ferguson.)

(*a*) MOSQUITOES.

Collecting during the year was principally confined to Milson Island, in the Hawkesbury River, but a few country trips were made and yielded some new records. Owing to military duties, continuous notes were not made after August.

Sub-family Anophelinæ.

Nyssorhynchus annulipes, Walker.—Milson Island (9th January, 1915). Dr. R. Dick (*Aust. Med. Gaz.*, xxxi, 1912, p. 27) records this mosquito as common in Newcastle and along the seaboard, coming into houses and sometimes biting during the daytime. He also records it as fairly common inland at Narrabri and Walcha, the latter place having an elevation of 3,000 feet above sea-level.

Pyretophorus atratipes, Skuse.—Laurieton, North Coast District (19th October, 1915).

Five females were taken by Dr. Cleland, and others were seen biting in the scrub during the late afternoon. Hitherto this species has always been very rarely met with, and only in single specimens; if the species proves to be common throughout the North Coast there may be a risk of endemic foci of malaria being established.

Sub-family Culicinæ.

Mucidus alternans, Westw.—Wollongong (23rd January, 1915).

Stegomyia atripes, Skuse (*Mimetomyia teste*, Edwards)—Mount Irvine (Darnell-Smith, 19th January, 1915); Uralla (J. B. Cleland, 3rd March, 1915); Dubbo (18th March, 1915); Milson Island (January to May). On Milson Island this species, though never very plentiful, could always be taken in certain positions, usually around a calf confined in an open pen.

Stegomyia fasciata, Fabr.—Dr. R. Dick (*l.c.*) mentions this species as occurring commonly in Newcastle, biting principally in the daytime; this appears to be about the southern limit of its range in East Australia, according to our own observations.

Pseudoskusea sp.—Milson Island and mainland opposite (January), never common on the island; appears to be strictly a bush species. *Scutomyia*

Scutomyia notoscripta.—Mount Irvine (Darnell Smith, 19th January, 1915); Milson Island, constantly present throughout the summer.

Culicada (*Ochlerotatus*) *vittiger*, Skuse.—Glenbrook (6th January, 1915); Uralla (J. B. Cleland, 3rd March, 1915).

Culicada milsoni, Taylor.—Milson Island, present throughout the summer. Edwards placed this species in *Ochlerotatus*.

Culex occidentalis, Skuse, and *Culicada cumpstoni*, Taylor, var.—Specimens of both species have been identified by Taylor from Milson Island. I have not seen Taylor's description of *C. cumpstoni*, but I have so far been unable to differentiate between the two species. Edwards places *C. occidentalis*, Skuse, in *Ochlerotatus*, and identified a specimen of *C. cumpstoni* var. (determined by Taylor) as typical *O. occidentalis*.

Culicelsa (*Ochlerotatus*) *vigilax*, Skuse.—Plentiful on Milson Island throughout the summer from January onwards. Larvæ from a pool flooded during rain and with access to sea-water open, proved to be this species.

Specimens were also procured from the following places:—Wollongong (22nd January, 1915); Bulli (25th March, 1915); Lisarow (1st May, 1915); Stockton (24th November, 1915); Laurieton (19th October, 1915).

Culex (*Ochlerotatus*) *rubrithorax*, Macq.—Wollongong (22nd January, 1915); Hawkesbury River (January, not uncommon in scrub on mainland).

Culex (*Ochlerotatus*) *alboannulatus*, Macq.—Wollongong (25th January, 1915, breeding in water-trough on Mount Keira); Laurieton (19th October, 1915, one female); Dubbo (bred from larvæ, 18th July).

Culex (*Ochlerotatus*) *sagax*, Skuse.—Specimens taken by Dr. Chapple at Deniliquin appear to belong to this species but are too abraded for certain identification.

Culicelsa (*Culex*) *sitiens* (*annulirostris*, Skuse).—Milson Island. Not uncommon amongst mangroves during summer. Specimens have also been taken on the top of the island and over on the mainland. Belaringar (Nevertire), one female taken (20th March, 1915); Sydney, one female (28th March, 1915).

This species has hitherto been met with biting mainly in the daytime, but on Milson Island it was biting both by night and day.

Culicada (*Culex*) *linealis*, Skuse.—Laurieton (19th October, 1915, one female); Sydney (October, 1915, one female).

Culicada fergusoni, Taylor.—Larvæ were taken in a pool on Milson Island but failed to breed out. Edwards would probably place this species in *Culex*.

Culex biocellatus, Taylor.—Milson Island, one female taken biting in the calf paddock on the morning of 8th February.

Culex fatigans, Wied.—Sydney, Milson Island, Wollongong (January), Dubbo (March), Bulli (March), Liverpool (January), Kurri Kurri (June), Glenbrook (January).

Dr. R. Dick (*l.c.*) records having succeeded in infecting locally bred (*i.e.*, Newcastle) *C. fatigans* with *Filaria bancrofti*, by feeding them on a boy, whose blood showed the presence of numerous microfilariæ.

Culex cylindricus, Theob.—A mosquito identified provisionally as this species was not uncommon in the scrub on the mainland of the Hawkesbury River in January; also taken on Milson Island.

Grabhamia sp.?—Hawkesbury River (16th January, 1915).

Cœnocephalus concolor, Taylor.—Port Kembla (23rd January, 1916); Coogee (28th January, 1915).

(*b*) TABANIDÆ (March Flies).

During the year attention was directed to the collection of Tabanidæ, especially on Milson Island. About eleven species have been captured on the island and an additional one upon the mainland opposite; only about four of these can, however, be said to be at all common; other tabanids have at times been seen but not captured. The following is the list of species recorded from this neighbourhood:—

Sub-family PANGONINÆ.

Erephrosis jacksoni, Macq.—One female taken on the mainland.

Demoplatus australis, Ric. (M.S.)—Four males belonging to this species were captured in the autumn, in the bush on the top of the island. They seemed to prefer the bracken on which they frequently settled.

Demoplatus sp.?—One male taken in a sweepnet.

Demoplatus sp.?—One female, taken on a *Casuarina*. The wings are clouded as in *D. australis*, but the body and thorax are much lighter in colour.

Sub-family TABANINÆ.

Tabanus regis-georgii, Macq.—This is fairly abundant during the summer and has been taken both on a horse and cattle. It also attacks human beings. On animals its favourite position is under the hock, and on man the back of the ankles.

Tabanus oculatus, Ric. (M.S.)—Moderately common last summer on the horse. This species is very like an unidentified species from Milson Island, but differs in its bright green eyes and yellow venter.

Tabanus circumdatus, Walker.—This species is perhaps the one most commonly met with on the mainland, and is not uncommon on the island.

Tabanus vetustus, Walker.—Only one specimen has been met with on the island; this was taken some years ago, biting an injured horse.

Tabanus

Tabanus sp.—Like *T. oculatus*, Ric., but with darker dull grey-brown eyes, and darker venter. Common on the island, attacking both horses and cattle.

Tabanus sp.—A large species, two or three specimens of which were taken in the summer of 1915, but which has not been seen since.

Tabanus sp.—A large dark species, only one specimen of which has been taken.

Tabanus sp.—A single specimen of a species allied to *T. circumdatus*, but with much lighter abdomen and all yellow legs.

(c) LEPTIDÆ.

During the year four species of blood-sucking leptid flies were obtained; these were all undescribed, and a paper was communicated to the Royal Society of New South Wales describing and naming the four species. All belong to *Spaniopsis*, White, a genus containing a single blood-sucking species from Tasmania. Since the paper was published I have received information that this genus occurs also in South Australia, but have not had an opportunity of examining specimens. The following is a list of the described species :—

Spaniopsis tabaniformis, White.—Freycinet Peninsula, Tasmania. We are indebted to Mr. Arthur White for a co-type of his species.

Spaniopsis vexans, Ferg.—Milson Island (10th April, 1915).

Spaniopsis marginipennis, Ferg.—Gosford (24th May, 1915), Milson Island (3rd June, 1915).

Spaniopsis clelandi, Ferg.—Hawkesbury River (March), Mount Irvine (January), Wentworth Falls (March).

Spaniopsis longicornis, Ferg.—Gosford (24th May, 1915), Mount Wilson (6th June, 1915).

During a recent visit to England I was able to examine the two specimens taken by Dr. Cleland in June, 1911, at Middle Harbour, Sydney, and forwarded to Mr. Austen. They proved to be a specimen each of *S. clelandi* and *S. vexans*. Reference has been made to these specimens in a previous report.

14. ACARINA.

(E. W. Ferguson.)

Family Gamasidæ.

Leiognathus bacoti, Hirst.—This species, described by Hirst from specimens taken on *Mus norvegicus* (*Bull. Ent. Res.* iv, p. 122 [1913]), is of wide distribution. Hirst (*op. cit.*, v, p. 225 [1914]) records it from Egypt, Abyssinia, Australia and South America. It appears to be the mite commonly found on rats at Sydney. We are indebted to Mr. Stanley Hirst for the identification. The species is of decided medical interest, as causing considerable irritation of the skin in human beings.

In January, 1914, information was sent to the Laboratory that the workers in a boot factory in Sydney had been attacked by small mites while at work. Specimens of these mites were forwarded, and thought by the Department to be the same as a species common on rats. At our request a specimen of a rat was obtained from the factory and also a rat's nest, and in both of these mites were found; mites were also found in dust from the factory.

In March, 1914, a specimen of a rat was submitted from a seed shop adjoining the boot factory, with a similar complaint that "insects" were infesting the back premises. The same mite was detected on the rat. A personal inspection of the premises showed that in the back part of the shop were old shelves, on which papers had been stored. These had been removed, but traces of rats were abundant, and in the crevices of these shelves mites were numerous. Adjoining this room was a lavatory, and the complaint was chiefly that the employees became infested with the mites on using the lavatory. The presence of the insect on the skin led to considerable irritation, with scratching.

Specimens from all these sources were forwarded to Mr. Hirst, of the British Museum, and identified as *Leiognathus bacoti*, Hirst.

This species was also found in Fremantle, Western Australia (J.B.C., 1908), where they were biting at night on the wharves and causing considerable irritation to human beings working there. These Western Australian specimens were also identified by Mr. Hirst as belonging to this species.

15. THE HÆMATOZOA OF AUSTRALIAN REPTILES.

(J. B. Cleland.)

In the Proceedings of the Linnean Society of New South Wales for 1910 (p. 677) and for 1911 (p. 479) Dr. T. Harvey Johnston and myself contributed two papers entitled "The Hæmatozoa of Australian Reptilia, No. 1 and No. 2," dealing with the results of our search of blood slides from various Australian reptiles for the presence of any parasites. The present contribution is a continuation of this series, representing the results of the examination of a large number of blood smears from various reptiles. As the circumstances under which the slides have been obtained prevented the preparation of wet-stained films, the accuracy of detail obtained by the examination of such films is necessarily lacking. Whilst with dry blood films the parasites present may often appear clearly defined, still too much reliance cannot be placed on such appearances, especially when delicate features are examined. Nevertheless a considerable amount of important

nformation

information can be obtained in this way, and at least the presence or absence of parasites can be ascertained, and their grosser features determined. The work has proved of interest and should be of use to future investigators who have opportunity and time for more detailed examination of the parasites discovered.

The Hæmogregarine of the Brown Snake, *Dicmenia textilis*.—In the blood of a brown snake kindly forwarded by Dr. Cox from Helensburgh, New South Wales, in October, 1914, several broad hæmogregarines were found in the red cells, their capsules measuring about 14·6 x 4·2 μ. The host cells were not enlarged.

Hæmogregarina bancrofti, Jhstn. and Cl., from *Pseudechis australis*.—A single hæmogregarine, probably this species, was seen in the blood of *Pseudechis australis*, forwarded in April, 1913, from Eidsvold, Queensland, by Dr. Bancroft. We have previously described *H. bancrofti* from this snake.

The Hæmogregarine of *Denisonia olivacea*.—Hæmogregarines were fairly numerous in the red corpuscles of a film from this snake obtained by Dr. Bancroft at Eidsvold, Queensland, early in 1913. They were all long and very narrow, occupying a space in the host cell of about 15·5 x 2·5 μ. There was no marked capsule and the host cell was not enlarged. The nucleus, about 5 μ long, was nearer the broad end of the parasite, in one example the relation being—broad end, 7 μ, nucleus, 5·2 μ, narrow end, 3·4 μ. The latter end was slightly curved but no sharp bending back on itself of the extremity could be made out.

I am inclined to think that this species differs from those found in other Australian snakes, though some slender forms of *H. pseudechis* of the black snake resemble it.

Hæmogregarina clelandi, Jhstn., from Tortoises.—Further specimens from tortoises infected with this parasite have been examined, all kindly forwarded from Eidsvold, Queensland, by Dr. Bancroft. The tortoises included *Chelodina longicollis* (February and September, 1911, and in 1914), in which a few hæmogregarines were noted; *Ch.* sp.—termed by Dr. Bancroft, "Overlander"—(January, 1914), in which there were scattered parasites, all full grown; and *Emydura krefftii* (September, 1911, and April, 1913), in which latter there were a few small and adult forms. A small hæmogregarine was also seen at one end of a red cell in a film obtained from a specimen of *Elseya dentata* referred to later on as containing peculiar bodies in its red corpuscles.

Hæmogregarine of the Gecko, *Oedura tryoni*.—In June, 1911, Dr. Bancroft kindly forwarded slides from two of these lizards from Eidsvold, Queensland. *Hæmocystidia* were present in both, and a hæmogregarine was seen in one. The slides have unfortunately been misplaced.

Hæmogregarina varanicola, Jhstn. and Clel.—Further instances of infection of *Varanus varius* with this hæmatozoon were seen in blood slides from two of these reptiles kindly forwarded to us from Eidsvold, Queensland, by Dr. T. L. Bancroft, and taken in December, 1911. In one, the parasites were few.

What appears to be the same hæmogregarine has been met with in blood slides from *Varanus punctatus* var. *orientalis*, also sent from the same locality by Dr. Bancroft, and taken in February, August, and September, 1913, and in February, 1914. In several hæmogregarines of the February, 1914, specimens, two small purple dots were distinct towards one end. In only one instance were the hæmogregarines numerous. Also a specimen from *Varanus* sp. ("large goanna"), dated 8th December, 1911, contains this form.

Hæmogregarina gouldii, Jhstn. and Clel.—This hæmatozoon, which has a more detrimental effect on the host cell than *H. varanicola* and markedly enlarges it, has been met with again in *Varanus gouldii* obtained by Dr. Bancroft in December, 1911. In a slide from another example of this species taken by him in September, a few hæmogregarines were seen more resembling *H. varanicola* than the present species, but the specimens were too imperfect for identification. In a slide from Dr. Bancroft, labelled "Sand Goanna, head like *V. gouldii*," *H. gouldii* was present. Infected red cells, instead of the normal measurement of 15 to 17 x 8·5 μ, with a nucleus 5 μ long, were found as large as 26 x 12 μ with a displaced nucleus 8·5 μ long and the encysted parasite 12·25 x 5·5 μ. Probably the reptile was specifically *V. gouldii*, and in the table in the appendix we have included it as such.

Hæmogregarina tiliquæ, Jhstn. and Clel.—Two further infected specimens of *Tiliqua scincoides* have been met with. One came from Dr. Bancroft at Eidsvold, Queensland, in February, 1913. The other was obtained at Milson Island, Hawkesbury River, near Sydney, in November, 1911. This latter is of special interest since sporulating forms were numerous in the blood, though unfortunately the slides obtained were very poor. In addition to a few hæmogregarines, at one end of a slightly enlarged red cell was seen a rounded, dark blue mass, 8·5 μ in diameter, the host-nucleus being displaced endwards; there were reddish chromatin masses in the blue protoplasm, and some fine grains of pigment like melanin at one side. This body suggested a *Hæmocystidium*. Schizogony was common, a number of oval capsules, sometimes with surrounding remains of the host-cell, being seen. The cysts were 13·5 to 14 x 8·5 to 9 μ in size. Eight merozoites could be seen in most of the cysts, though sometimes one would be hidden and only seven be counted; in one case only four were noted. They were oval, 3·5 x 2 μ, with a small central purple area. They were associated in groups of four towards each end of the cyst, resembling the assembling together of the chromosomes of a dividing cell to form the daughter nuclei.

Hæmogregarina hinuliæ, Jhstn. and Clel. (?).—In our previous papers we have described *H. hinuliæ*, a parasite of the skink *Lygosoma* (*Hinulia*) *quoyi*. In March, 1911, we

we received from Dr. Bancroft, at Eidsvold, Queensland, a blood slide from *Lygosoma* (*Hinulia*) *tæniolatum*. This showed the presence of a hæmogregarine as well as of a trypanosome. Unfortunately the specimen has been mislaid, and I have been unable to compare this hæmogregarine with *H. hinuliæ*, but it is probably specifically identical. Only one infected lizard has been found out of four examined from various localities.

Hæmocystidium simondi, Cast. and Willey, (?), in Geckos.—Hæmocystidia appear to be common parasites of Australian geckos. In two specimens of *Œdura tryoni* forwarded to us by Dr. Bancroft from Eidsvold, Queensland, in June, 1911, they were present in both, associated with a hæmogregarine in one case. They were found in abundance with occasional trypanosomes in one of two specimens of *Gehyra variegata* obtained near Morgan on the lower Murray in South Australia in November, 1913, and a very slight infestation was seen in two examples of *Gymnodactylus miliusii* from the Sydney Zoological Gardens. There do not seem to be sufficient differences between the parasites in these different hosts to warrant, at present at least, specific separation of them, and it is probably better to provisionally place them all under *H. simondi* of Castellani and Willey described from a gecko in Ceylon.

H. simondi (?) in *Œdura tryoni*, de Vis.—These specimens were sent by Dr. T. L. Bancroft from Eidsvold, Queensland. The parasite may occupy practically the whole of the available protoplasm of the host cell, the host-nucleus being displaced to the side or towards one end. The hæmocystidium stained a deep blue, with scattered melanin granules throughout. The specimens have unfortunately been mislaid preventing comparison with the forms in *Gehyra variegata*.

H. simondi (?) in *Gehyra variegata*.—This gecko was obtained near Morgan, South Australia, in November, 1913. Hæmocystidia were numerous and double infection common. The parasite, when full-grown, almost entirely filled the host-cell, frequently completely surrounding the host-nucleus but not necessarily obviously displacing it. When younger, they were often spherical and occupied the end of the host cell. Sometimes a parasite occupied each end of the cell, and in one instance a pale form (male) at one end partly overlapped a deep blue form (female), the host-nucleus being displaced towards the other end. In some instances, with displacement of the host-nucleus, the hæmoglobin had been in part discharged (possibly through injury when making the film). There were numerous fine grains of pigment scattered throughout the parasite, the grains in the pale male forms being apparently finer. In the pale forms a small more or less central spherical nucleus could be detected. Some red cells contained as many as three male forms lying beside each other, whilst two males in a cell were not infrequent. Male and female together in a cell was a rarer occurrence.

H. simondi (?) in *Gymnodactylus miliusii*.—In blood films from two specimens of this gecko, for which we are indebted to Mr. A. S. Le Souef, the Director of the Zoological Gardens, Sydney, a very slight infestation was noted in each. Its characters seemed similar to those in *Gehyra variegata*.

Bodies in the Leucocytes of a Lizard (*Lygosoma*).—In the leucocytes of a skink, *Lygosoma* (*Liolepisma*) *gaichenoti*, Dum. and Bibr., obtained at Sydney in April, 1914, peculiar bodies, probably not parasitic, were noticed. The leucocytes affected were small ones with purple stained somewhat irregular nuclei of 5 to 7 μ diameter. In some cases, lying in the clear protoplasm close to the nucleus on one side, lay a blue mass somewhat vacuolated and without detectable chromatin, in size varying from 1·7 to 5 and even 7 μ in diameter. In some instances, the "body" lay at one end of the cell, whose nucleus seemed pushed to the other end, the "body" and the nucleus being of nearly the same size. In one case the body was replaced by about four ring-shaped smaller ones of 1·5 μ diameter each.

These bodies are probably merely the reptilian representatives of the granules not infrequently seen in certain mononuclear cells of mammals. Their size is, however, remarkable and a parasitic nature cannot be excluded.

Peculiar bodies in the red corpuscles of the Tortoise, *Elseya dentata*.—In a blood film from *Elseya dentata*, forwarded by Dr. Bancroft from Eidsvold, Queensland, in September, 1913, every red corpuscle was found occupied by 5 to 10 or more irregular dark blue (Giemsa's stain) bodies up to 3·5 x 1 μ in size, arranged in the protoplasm usually as an irregular ring round the nucleus. The nucleus seemed quite unaffected and this, together with the size of the fragments added together, would seem to exclude their origin in fragmentation of the nucleus. Their abundance and uniform presence and general characters seem to exclude a parasitic origin, and the only explanantion left is some peculiar histological departure from the normal. A single hæmogregarine was also seen in a red cell.

Trypanosomes.—Trypanosomes have previously been recorded by Harvey Johnston and myself in two Australian tortoises, *Chelodina longicollis* and *Emydura krefftii*. In several specimens of each species since examined they have been met with once in the former. So far, we have not met with these parasites in any Australian Ophidia. Amongst the lizards, we have found them in one of the Scincidæ, *Lygosoma* (*Hinulia*) *tæniolatum*, and in one of the Geckonidæ, *Gehyra australis*.

Trypanosome of *Gehyra variegata*.—In two specimens of this gecko, one of which contained in addition numbers of *Hæmocystidium simondi* (?), a few broad trypanosome-like bodies were noted which unfortunately were much injured. Their length along the middle line was about from 34 μ to 40 μ, whilst the greatest breadth varied from 7 to 12 μ. One end was sharply contracted to a point, near which a doubtful micronucleus was situated; the body from this end rapidly broadened and showed longitudinal foldings,

often

often resembling ribs, and sometimes partial twisting, whilst the other end gradually tapered. In one specimen in the centre of the body a minute chromatin-looking dot existed surrounded by a narrow indistinct pale area. The undulating membrane was very indefinite and no definite free flagellum could be detected.

Trypanosome of *Lygosoma* (*Hinulia*) *tæniolatum*.—Trypanosomes as well as hæmogregarines were detected in a blood-slide from one of these skinks kindly forwarded in March, 1911, from Eidsvold, Queensland, by Dr. Bancroft. The slide has unfortunately been mislaid.

Microfilariæ.—Dr. Harvey Johnston and myself have described the occurrence of microfilariæ in the blood of the water-lizard, *Physignathus lesueurii*, from the Burnett River, Queensland. In January, 1913, Dr. Bancroft kindly forwarded me films from another of these lizards from the same locality similarly affected.

Microfilaria of *Tiliqua scincoides*.—In February, 1913, I received from Dr. Bancroft blood-films from this species from Eidsvold, Queensland, in which microfilariæ and *Hæmogregarina tiliquæ* were both present. The microfilariæ were obviously of a different species to those found in *Physignathus lesueurii*. Their total length was about 100 μ, and the greatest breadth between 5 and 6 μ. The breadth was uniform till about the junction of the middle and posterior thirds, when the body began slightly to diminish in diameter until at the tail where it became rapidly conically attenuated. The clear area at the head, occupied by several isolated nuclei, was about 7 μ long; this was followed, 31 μ from the anterior end, by a "break" of 7 μ; 25 μ behind this was a further short "break" of 2 μ and 15·5 μ behind this again a longer one of 7·5 μ; behind this, the microfilaria rapidly attenuated to end at 8 μ.

1. List of Reptiles in which Hæmogregarines have been found.

Order Ophidia.

Family Boidæ.

Python variegatus.—Eidsvold, Queensland, October, 1910, and February, 1911, *H. shattocki*.

Family Colubrinæ.

Diemenia textilis.—Eidsvold, Queensland, October, 1910, *nil;* Helensburgh, October, 1914.

Pseudechis porphyriacus.—Hawkesbury River, February, 1911, *H. pseudechis;* Sydney, February and May, 1911, both *nil*.

Pseudechis australis.—Eidsvold, Queensland, March, 1911, *H. bancrofti;* ditto, April, 1913, *H. bancrofti;* ditto, October, 1913, *nil*.

Pseudechis mortonensis.—Eidsvold, Queensland, January, 1911, *H. bancrofti*.

Denisonia olivacea.—Eidsvold, Queensland, 1913, *H. sp.*

Order Chelonia.

Chelodina longicollis.—Eidsvold, Queensland, November, 1910, *H. clelandi;* Botany Bay, August, 1911, *nil;* Eidsvold, Queensland, September, 1911, two specimens, *H. clelandi* in both with *Trypanosoma chelodinæ;* Eidsvold, Queensland, 1914 (*C. longicollis* ?), *H. clelandi*.

Chelodina sp. (termed "Overlander" by Dr. Bancroft).—Eidsvold, Queensland, January, 1914, *H. clelandi*.

Emydura krefftii.—Burnett River, Queensland, Dr. Bancroft, April, 1910, two specimens, *H. clelandi* (also *Trypanosoma chelodinæ* and *Hæmocystidium chelodinæ*) in one and *nil* in the other; ditto, September, 1910, *H. clelandi* (and *T. chelodinæ*); ditto, October, 1910, *H. clelandi;* ditto, January, 1911, *H. clelandi* (and *T. chelodinæ*); ditto, September, 1911, and April, 1913 (two specimens), *H. clelandi*.

Elseya dentata. — Eidsvold, Queensland, Dr. Bancroft, September, 1913, *H. clelandi* (*?*) (also a number of peculiar bodies in the protoplasm of the red cells, probably non-parasitic).

Order Lacertilia.

Family Geckonidæ.

Œdura tryoni.—Eidsvold, Queensland, June, 1911, two specimens, *H.* sp. in one (with *Hæmocystidium* in both).

Varanidæ.

Varanus varius.—Eidsvold, Queensland, Dr. Bancroft, October, 1910, *H. varanicola;* ditto, November, 1910, *H. varanicola;* ditto, December, 1910, *H. varanicola;* ditto, March, 1911, *nil;* ditto, December, 1911, two specimens, *H. varanicola;* Dubbo, September, 1911, *nil*.

Varanus sp.—Eidsvold, Queensland, October, 1910, *H. varanicola*.

Varanus sp. ("large goanna")—Eidsvold, Queensland, December, 1911, *H. varanicola*.

Varanus punctatus var. *orientalis* :—Eidsvold, Queensland, Dr. Bancroft, February, August, September, 1913, and February, 1914, all with *H. varanicola*.

Varanus gouldii.—Eidsvold, Queensland, Dr. Bancroft, October, 1910, (2) *H. gouldii* in one; December, 1910, (2), *nil;* March, 1911, *H. gouldii;* September, 1911, *H. gouldii;* December, 1911, (2) *H. gouldii* in one. "Sand-goanna," probably this species, Eidsvold, November, 1911, *H. gouldii*.

Family

Family Scincidæ.

Tiliqua scincoides.—Hawkesbury River, October, 1910, *H. tiliquæ;* Gunnedah, February, *nil;* Eidsvold, Queensland, April, 1911, and two specimens in 1913, all *nil*, and one in February, 1913, *H. tiliquæ* (and *Microfilariæ*); Hawkesbury River, November, 1911, *H. tiliquæ.*

Lygosoma (*Sphenomorphus*) *quoyi.*—Hawkesbury River, November, 1910, two specimens, *H. hinuliæ* in one, *nil* in one; Kosciusko, December, 1910, *nil.*

Lygosoma (*Hinulia*) *tæniolata.*—Eidsvold, Queensland, March, 1911, *H. hinuliæ* (?) (with *Tryp.* sp.); Hawkesbury River, November, 1910, *nil*; Sydney, February, 1911, *nil;* Eidsvold, Queensland, June, 1911, *nil.*

2. List of Reptiles in which Hæmocystidia have been found.

Order Chelonia.

Chelodina longicollis.—*H. chelodinæ* previously found in this species. See under "Hæmogregarines," further specimens examined with negative results as regards this hæmatozoon.

Emydura krefftii.—See under "Hæmogregarines," eight further specimens from Eidsvold examined with *H. chelodinæ* in one.

Order Lacertilia.

Family Geckonidæ.

Gymnodactylus miliusii.—Zoological Gardens, Sydney, September, 1914, two specimens, both infected (*H. simondi* ?)

Œdura tryoni.—Eidsvold, Queensland, June, 1911, 2 specimens, *Hæmocystidium simondi* in both (*Hæmogregarina* sp. in one).

Gehyra variegata.—Eidsvold, Queensland, March, 1911, *nil;* Morgan, South Australia, November, 1913, two specimens, *Hæmocystidium simondi* (?) in one (*Trypanosoma* sp. in both).

3. Reptiles in which Trypanosomes have been found.

Order Ophidia.

None.

Order Chelonia.

Chelodina longicollis.—Burnett River, Queensland, 1910, *T. chelodinæ.* See under, "Hæmogregarines," two further specimens negative.

Emydura krefftii.—Eidsvold, Queensland. See under "Hæmogregarines," present in three out of eight specimens examined.

Order Lacertilia.

Family Geckonidæ.

Gehyra variegata.—Morgan, South Australia, November, 1913, two specimens, *T.* sp. in both (*Hæmocystidium* sp. in one).

Family Scincidæ.

Lygosoma (*Hinulia*) *tæniolata.*—Eidsvold, Queensland, March, 1911, *T.* sp. (with *Hæmogregarina hinuliæ* ?); Hawkesbury River, November, 1910, *nil*; Sydney, February 1911, *nil*; Eidsvold, June, 1911, *nil.*

4. List of Reptiles in which Microfilariæ have been found.

Order Lacertilia.

Family Agamidæ.

Physignathus lesueurii.—Eidsvold, Queensland, December, 1910, *Microfilaria* sp. January, 1913, *Microfilaria* sp. and April, 1913, *nil.*

Family Scincidæ.

Tiliqua scincoides.—Hawkesbury River, October, 1910, hæmogregarines only; Gunnedah, February, *nil;* Eidsvold, Queensland, April, 1911, and two specimens in 1913, *nil*, and another specimen, February, 1913, *Microfilaria* sp. (and hæmogregarine).

5. List of Reptiles in which Hematozoa have not been found.

Order Ophidia.

Family Colubrinæ.

Diemenia psammophis.—La Perouse (Sydney), November, 1914.

Denisonia coronoides, var.—Kosciusko, December, 1910.

Hoplocephalus bitorquatus, var. *Waitzi.*—Eidsvold, Queensland, June, 1911.

Notechis scutatus.—Sydney, January, March and May, 1911.

Furina occipitalis.—Eidsvold, Queensland, April, 1911; Helensburgh, New South Wales, November, 1914.

Small snake: Eidsvold, Queensland, September, 1913.

Order

Order Lacertilia.

Family Geckonidæ.

Phyllodactylus guentheri.—Lord Howe Island (three specimens), November, 1910.
Gehyra australis.—Eidsvold, Queensland, June, 1911.

Family Pygopodidæ.

Lialis burtonii.—Helensburgh, January, 1914.

Family Agamidæ.

Amphibolurus muricatus.—Locksley, February, 1911; Bathurst, January, 1911; Gunnedah, February, 1911.
Amphibolurus barbatus.—Eidsvold, Queensland, October and November, 1910, and January, 1911; Cowra, October, 1911; Emmaville, December, 1910.
Chlamydosaurus kingii.—Eidsvold, Queensland, December, 1911.

Family Scincidæ.

Egernia whitei.—Eidsvold, Queensland, June, 1911 (three specimens).
Egernia striolata.—Eidsvold, Queensland, March, April (two specimens), and December (three specimens (?) *E. whitei*), 1911.
Trachysaurus rugosus.—Mannum, South Australia, November, 1913.
Tiliqua nigrolutea.—Flinders Island, November, 1912 (two specimens).
Lygosoma (*Hinulia*) *lesueurii.*—Eidsvold, Queensland, June, 1911 (four specimens).
Lygosoma (*Hinulia*) *fasciolatum.*—Eidsvold, Queensland, June, 1911, and (?) date.
Lygosoma (*Hinulia*) sp. nov.—Kosciusko, December, 1910.
Lygosoma (*Sphenomorphus*) *tenuis.*—Sydney, October, 1913.
Lygosoma (*Liolepisma*) *entrecasteauxii.*—Flinders Island, November, 1912 (two specimens).
Lygosoma (*Liolepisma*) *trilineatum.*—Hawkesbury River, February, 1911; Buffalo Mountain, Victoria, January, 1913.
Lygosoma (*Liolepisma*) *lichenigerum.*—Lord Howe Island, November, 1910 (five specimens).
Lygosoma (*Hemiergis*) *peronii* var. *pectorale.*—Eidsvold, Queensland, April, 1911.
Lygosoma (*Lygosoma*) *verreauxii.*—Eidsvold, Queensland, June, 1911.
Lygosoma (*Lygosoma*) *ophioscincus.*—Hawkesbury River, October, 1912.
Ablepharus sp.—Hawkesbury River, October, 1912.
Skink.—South Head, Sydney, April, 1913.
Skink.—Sydney, January, 1914.

Division V.—General.

16. CONTRIBUTIONS TO THE HISTORY OF DISEASES IN MAN IN AUSTRALIA.

(J. B. Cleland.)

(*a*) HYDATID DISEASE.

As hydatid disease is more prevalent in Australia than in almost any other part of the world, it is natural that the number of cases reported should be large. It is proposed, as time and opportunity offer, to epitomise, under the sites affected, the various cases recorded in Australian medical literature, and the present compilation represents the first contribution with this object in view.

Hydatid Disease of the Bones and Joints.

1887.—C. G. Leacock, Camden (*Australasian Medical Gazette*, November, 1887, p. 29, "Hydatids of the Femur").

The patient was a man, aged 40 years, with a history of several previous injuries to the joint and a recent incapacitating one. It was decided to amputate the thigh in the lower third. The lower end of the femur was hollowed out into a large cavity stuffed full of hydatid cysts, which were from the size of small peas to nearly one inch in diameter.

C. P. B. Clubbe, in a discussion on the above paper before the New South Wales Branch of the British Medical Association (*loc. cit.*, p. 45), referred to a case of hydatid disease in the bone near the knee which was operated upon by Dr. William Chisholm, the patient being a girl with a well-defined swelling near the knee.

1893.—B. Poulton (*Australasian Medical Gazette*, June, 1893, p. 193, "Hydatids of the Tibia and Knee Joint.")

The patient was a woman, 26 years old, with an enlarged knee and a small discharging sinus. At the operation a cavity in the head of the tibia the size of a walnut was found filled with tapioca-like masses; the surrounding parts were invaded by numbers of small growths. In the tibia, below the cavity, there were three separate small cysts the size of peas, the lowest being 4 inches from the upper end of the bone. Neither mother cyst nor adventitious membrane were detected in the cavity in the head of the tibia; laminated membrane, but no hooklets or scolices, were seen in the tapioca-like mass. The popliteus muscle contained a dense cavity the size of a bantam's egg showing several collapsed cysts, and a smaller cavity near by occupied by another hydatid cyst.

1894.—R. A. Stirling, of Melbourne (*Australian Medical Journal*, vol. 16, 1894, p. 183, "Case of Hydatids and Fracture of Femur—Union—Refracture from Hydatid Disease").

The patient was a labourer, 21 years old, who slipped and fell, breaking his thigh in the middle. Good union followed in six weeks. Later, an unusual amount of provisional callus formed, but not at the seat of fracture. Five months later the femur was greatly thickened from the knee to the hip, the joints escaping. An abscess appeared in the lower and inner part of the thigh. This was opened and laudable pus and fragments of hydatid membrane removed. At the operation next day the femur was found to be merely a shell of bone except at its posterior part. There were innumerable daughter cysts but no mother cyst or adventitious membrane. The cavity gradually filled up. The original accident had been slight.

The author refers to a previous case, under Mr. Webb, of hydatid disease of the femur resembling a large sarcoma. He also mentions a note of Dr. Poulton's in the *Australasian Medical Gazette*, that of 267 hydatid cases in the Adelaide Hospital in ten years only one affected bone.

1895.—Professor A. Watson, of Adelaide, South Australia (*Australasian Medical Gazette*, April, 1895, p. 161), contributes a general article on "Hydatid of Bone."

He points out that hydatid disease occurs in bone not as a mono-cyst with an adventitious capsule, but as a brood of apparently motherless minute cysts without any capsule other than the endosteum. Isolated vesicles may even lie at a considerable distance from the principal cluster. In illustration of his paper he showed the upper end of a tibia containing hydatids in the cancellous tissue (this is probably a specimen from Dr. Poulton's patient mentioned above). The vesicles were minute and of fantastic shape, probably from pressure. He referred to a case he had seen of an hydatid in the white substance of the frontal lobe of the brain unconnected with a second cyst growing from the cerebral aspect of the internal angular process of the frontal bone.

Professor Allen had shown him this case, and also the vault of a skull from Deniliquin with several perforations due to multiple hydatids. He exhibited also a mono-cyst in a muscle, probably the gluteus maximus, and the coccyx with part of the sacrum (?) dotted with small white vesicles the size of pins' heads. In Melbourne he had seen a similar case of small vesicles in the cancellous tissue of the sacrum with extension into the spinal canal. He had also seen a "plurality of vesicles" removed from the antrum of Highmore, and in another case from an abscess cavity between the serratus magnus and the ribs. He discusses the possible views as to how bone becomes invaded.

Professor A. Watson (*Australasian Medical Gazette*, October, 1895, p. 415) exhibited a specimen of hydatid of a vertebra.

1896.—R. A. Stirling (*I.M.J. of Aust.*), vol. I, 1896, p. 83, "Notes on Hydatid Disease of Bone"—Four Cases).

Two of these were in the femur, one that already referred to above, the other in a man of 43 years, whose thigh had been fractured from slight violence five times. Though greatly enlarged, especially at the upper part, amputation was refused. Later, suppuration occurred in the outer trochanteric areas. This was opened. The infection spread to other areas with grave constitutional symptoms. Operation was now allowed and incisions were made into the area, but the patient died. At the *post-mortem* examination Dr. Officer found the whole of the left thigh a dense mass of hydatid material, even the muscles being obviously infiltrated. A large mother cyst lined the cavity in the bone—a rare condition in bone hydatids.

His third case was suppurating hydatids of the cancellous tissue of the posterior part of the ilium, finally bursting through and forming an abscess in the lumbar region.

The fourth case affected the medullary canal of the tibia, beginning in the centre and extending towards the extremities.

1897.—B. Poulton (*Australasian Medical Gazette*, April, 1897, p. 186) exhibited an hydatid of bone at a meeting of the Adelaide branch of the British Medical Association.

1898.—E. Burkitt, of Dubbo (*Australasian Medical Gazette*, August, 1898, p. 409), refers to an hydatid in the terminal phalanx of the finger, where there were myriads of daughter cysts so small as to require a lens to identify them. He also refers to an hydatid of the sacrum; the resulting abscess opened through the great sciatic notch into the buttock.

1901.—William Morrison, of Ballarat (*Australasian Medical Gazette*, December, 1901, p. 523, "Hydatid of Medulla of Humerus causing Fracture").

The patient was a girl of 17 years, who sustained a fracture of the arm through falling. Union failed, and an operation was performed and "an hydatid cyst with enormous daughter cysts was found in the space between the two fragments."

1902.—Professor Watson (*Australasian Medical Gazette*, May, 1902, p. 271) showed a specimen from a case of Dr. J. C. Verco, in which there was an aberrant form of hydatid affecting the third and fourth lumbar vertebræ from a paraplegic male aged 40 years. There was no mother cyst, the cavity being packed with vesicles the size of large peas.

Angas Johnson (*Australasian Medical Gazette*, December, 1896, p. 646) showed at Adelaide a specimen from a case of Dr. Poulton, where bone hydatids affected the cancellous tissue of the head of the tibia of a woman. The case was originally thought to be one of bone tuberculosis.

Hydatid Disease of the Orbit.

1865.—MacGillivray (*Australian Medical Journal*, August, 1865, p. 243, "Hydatid of Orbit").

A man of 40 years, suffering from pain and protrusion of the eyeball and finally loss of vision. On examination, there was great protrusion of the eyeball, and a dense fluctuating tumour was found between the floor of the orbit and the eyeball, which was diagnosed as an hydatid cyst. It was tapped with a trochar, but refilled. An incision was then made, from which eventually nine hydatid cysts emerged, the largest weighing ½ oz. Vision to a slight extent slowly returned.

1872.—A. S. Gray, Melbourne (*Australian Medical Journal*, vol. 17, 1872, p. 236, and *Australian Medical Journal*, vol. 2, n.s., 1880, p. 209, Hydatids of Orbit—4 Cases).

Case 1.—Boy of 10, giving a history of being struck by a piece of wood in the eye, followed by swelling some months afterwards. The globe protruded 2½ inches, while vision was perfect in both eyes. By puncture, characteristic hydatid fluid was obtained. An incision was made and 14 cysts were removed from the back of the orbit. Shortly after recovery from this operation Dr. Moloney saw the case, and came to the conclusion that there was still another cyst remaining. Puncture proved this to be correct, and the cyst was removed, the eye finally regaining its normal position.

Case 2.—From Bacchus Marsh. Tumour causing protrusion of the eye. Puncture removed three drachms of fluid containing *Echinococci*. The swelling refilled in 24 hours and was later tapped again, a highly fœtid fluid being removed. An incision was now made and a large cyst removed. Much constitutional disturbance followed, so the whole contents of the orbit were finally removed. These contained a number of cysts more or less broken down. The patient recovered.

Case 3.—Gray refers to a case operated on by the late Mr. Lawrence, when half a tea-cupful of small cysts from the size of a pea to that of a plum were taken from an orbital cyst.

Case 4.—He also refers to a case operated on by Mr. Bowman, where three hydatid cysts were found and removed.

1879.—Dr. Hardy, Launceston (*Australian Medical Journal*, vol. 1, n.s., 1879, p. 589, Hydatid of Orbit).

Woman, 22 years; pain followed by swelling in the eye; sight was lost after twelve months. On admission two years later the left eye was blind, with great protrusion of the globe. A cystic tumour was found at the back of the orbit on removal of the eye. Dense semi-solid contents were evacuated. Six months later the orbit had refilled with a cystic tumour. On puncturing this during removal six or seven small hydatid cysts escaped, and the main cyst was found to run back along the optic nerve.

1880.—A. S. Gray, Melbourne (*Australian Medical Journal*, vol. 2, 1880, p. 209, Hydatid of Orbit).

After referring to the first of his previous cases, Gray refers to a similar case from Sandhurst which he had lately seen, where the whole orbit was occupied by one large cyst. Ulceration occurred and the eyeball was destroyed.

1882.—Charles Gosse, Adelaide (*Proc. South Australian Br. British Medical Association*, 1882, p. 41, and *Australian Medical Journal*, February, 1883, p. 102, Hydatid of Orbit).

Boy, 17 years; history of a fall on the temple eight years previously; suppuration followed puncture of the cyst and removal of clear fluid; enucleation was then performed. Two unbroken daughter cysts were removed, about the size of a filbert.

Dr. Gosse states that he only knew of six Australian cases of hydatids of the orbit, five being reported from Victoria, and one by Hardy, of Tasmania.

1908.—E. H. Burkitt, Dubbo, New South Wales (*Australasian Medical Gazette*, August, 1908, p. 409), refers to having had a case of hydatid of the orbital cavity.

Hydatids of the Face.

1862.—Mr. Gilbee, Melbourne (*Australian Medical Journal*, vol. 7, 1862, p. 273, Hydatid of Cheek).

Boy, 17 years. A swelling was present opposite the upper molars on the left side, extending down below the inferior maxilla into the pharynx. A trochar drew off 4 ounces of clear watery fluid. Violent inflammation followed; eventually there was difficulty in respiration and deglutition. An incision was now made and a pint of pus and blood came away. Finally, during a fit of coughing, a quantity of white, tripy-looking stuff in shreds came away, proving to be the ruptured hydatid cyst. The patient progressed to recovery.

1895.—Gregory Sprott, Hobart (*Australasian Medical Gazette*, November, 1895, p. 440, Hydatid of Cheek).

Woman, 32 years; swelling of left cheek, which had broken three weeks befor , when about an ounce of clear fluid escaped. On examination the two front molars of the left upper jaw were loose, and on removing these a white structure was seen which proved to be an hydatid cyst, about the size of a duck egg.

Hydatid Disease of the Heart and Great Vessels.

1872.—Walter W. Spencer (*New South Wales Medical Gazette*, vol. 2, p. 307, 1872), describes a biloenlar cyst found in the right ventricle of the heart. This was apparently loose in the ventricle. The walls microscopically presented a fibrous appearance. The cyst was considered to be a simple one. (It seems possible that this may have been an hydatid cyst and not recognised as such. It is much easier to understand the presence of an hydatid cyst in the locality mentioned than a simple cyst).

1879.—W. G. Howitt (*Australian Medical Journal*, vol. 1, 1879, p. 394, "A Case of Hydatid Disease of the Heart, Lungs and Spleen").

The patient was a man, 47 years of age. There was a history of coughing up hydatid membrane. Capillary bronchitis developed and the patient died suddenly. An hydatid cyst the size of a hen's egg and full of small daughter cysts was found in the right ventricle, near the apex, projecting into the heart cavity. Rupture had occurred into the cavity. There were enormous hydatid cysts in the lungs. It was thought that most of these had been derived from the heart. There was a cyst in the spleen weighing 6½ lb.

N. Gray (*Australian Medical Journal*, vol. 1, 1879, p. 425) showed before the Medical Society of Victoria an hydatid in the wall of the right ventricle. This was the size of a walnut, and bulged outwards. The patient died suddenly; no other cysts were detected.

1880.—Bingham Crowther, House Surgeon to the General Hospital, Hobart Town (*Australian Medical Journal*, 1880, vol. 2, p. 362, "Bursting of an Hydatid Cyst situated in the Septum Ventriculi into the Right Ventricle").

Sudden death had occurred. The second division of the right pulmonary artery was blocked by a collapsed hydatid cyst, which had come through the septum ventriculi. Six or eight small cysts were found loose in the right ventricle.

1881.—H. B. Allen (*Australian Medical Journal*, vol. 3, 1881, pp. 97 and 193), in "Notes on Cases of Hydatid Disease from the Pathological Records of the Melbourne Hospital," refers to one case of hydatids affecting the lungs, the pulmonary artery, heart and spleen.

1882.—Evans, of Sydney (*Australasian Medical Gazette*, September, 1882, p. 169, Hydatids in the Left Ventricle of the Heart of a Woman). The specimen was exhibited. On incision twenty small cysts had rolled out. There was no evidence of hydatid disease of the liver or brain.

1887.—W. Gardner (*Proceedings, South Australian Branch of the British Medical Association*, 1887, p. 91, "Case of Hydatid Cyst eroding Walls of Subclavian Artery").

The patient was a girl of 16 years, with a swelling in the neck, suggesting softening caseous glands. On cutting down it was found to be an hydatid cyst extending backwards as far as the spine and into the chest. Twelve days later severe hæmorrhage ensued, which was finally uncontrollable, and death occurred next day. The trunk of the subclavian artery was so eroded as to detach the origins of the thyroid and vertebral arteries.

1897.—Sydney Jamieson (*Australasian Medical Gazette*, December, 1897, p. 598), at a meeting of the New South Wales Branch of the British Medical Association, read "Notes on a Case of Sudden Death and Rupture of an Hydatid Cyst into the Right Auricle."

The patient was a boy 9 years old. The immediate cause of death was the rupture of an hydatid cyst the size of a small orange into the right auricle. The cavities of the right auricle and right ventricle were filled with daughter cysts, a large daughter cyst blocking the right pulmonary artery. A number of other cysts unruptured were found beneath the epicardium, two of these being in close relation to the left ventricle. A sister of the patient had been operated on some years previously for hydatid of the liver.

In the discussion on the paper, Dr. Jenkins referred to a somewhat similar heart case he had exhibited at a Branch meeting some ten years before, the specimen being sent by Dr. Guy Warren. The man had had no previous symptoms, but was digging in the garden when he fell dead. The post-mortem examination showed a similar condition to that described by Dr. Jamieson.

1901.—A. Jeffreys Wood, of Melbourne (*Inter. M. J.*, vol. 6, 1901, p. 136, "Hydatid of the Heart").

Sudden death occurred whilst riding a bicycle. A large mother cyst with daughter cysts was present in the wall of the left ventricle. On removing the heart about a dozen daughter cysts, two the size of bantams' eggs, escaped. The left ventricle was much hypertrophied. The enlarged heart and pericardium obscured the lungs. There was a small retrogressive cyst in the right lobe of the liver, and a small pultaceous cyst between the liver and abdomen.

1902.—C. A. Altmann (*Inter. M. J.*, vol. 7, 1902, p. 573, "Hydatid of Heart—Rupture into Left Auricle, and Plugging of Left Carotid Artery").

This was a case of sudden death in a servant girl with no history of previous ill health. The cyst was the size of an orange.

1908.—B. Poulton (*Australasian Medical Gazette*, May, 1908, p. 242) exhibited, at a meeting of the South Australian Branch of the British Medical Association, a case of multiple hydatids in the brain and heart.

Hydatids of the Liver.

(Partial Bibliography only.)

1887. J. C. Verco (*Proc. South Australian Branch of the B.M.A.*, p. 9). The presence of an hydatid of the liver is mentioned in connection with a man suffering from a cerebral tumour.

Dr. Gardner (*Proc. S.A. Branch of the B.M.A.*, p. 60). A multilocular hydatid cyst of the liver was shown. Dr. Gardner pointed out that surgical interference in such a case would necessarily be useless.

J. C. Verco (*Proc. S.A. Branch of the B.M.A.*, p. 60). A large hydatid of the liver was shown at a meeting of the Branch.

J. C. Verco and Dr. Vaughan (*Proc. S.A. Branch of the B.M.A.*, p. 66: "Case of Hydatid of the Liver, under the care of Dr. Verco"). The patient was a girl of 8 years. An abdominal section was performed, the cyst removed, and the adventitial sac stitched to the edges of the abdominal wound. The patient died four days later. At the autopsy there was no sign of peritonitis. An hydatid was found to have excavated the whole of the right lobe of the liver. The cavity had a thick, rather gristly wall which was bile stained. Owing to the thickness of the adventitial wall the usual pressure of the abdominal walls was unable to bring the opposite surfaces of the cyst into contact as is usual in thinner sacs. Had this case survived, the filling up of the cavity by granulation tissue would consequently have been very tedious.

Walter Brown (*A.M.G.*, October, p. 3: "A Case of Hydatid"). The patient was a woman of 24 years. Illness first began five years ago. At the operation fourteen pints of fluid were removed, but apparently not the cysts. A rise of temperature, once to 104 degrees, occurred for some days afterwards. On the twelfth day and afterwards portions of the "pseudocyst" came away, and in seven weeks the hydatid cyst itself. Eventual recovery. The hydatid cyst was considered to be attached to the peritoneum behind the left lobe of the liver.

A. Lendon, Adelaide (*A.M.G.*, October, p. 15). At a meeting of the South Australian Branch of the British Medical Association, a specimen was exhibited from a case of hydatid which had originated in the Spigelian lobe of the liver, and after spreading out over the upper surface of the liver and attaining to enormous dimensions, had absorbed the diaphragm and pierced through a bronchus of the right lung. Death resulted from flooding of the lung with hydatid fluid during an attempt to remove the cyst and its contents three days after it had ruptured.

1888. P. T. Thane, Yass (*A.M.G.*, April, p. 159: "A Case of Hydatid Cyst".) The patient was a girl of 17 years complaining of sudden vomiting and jaundice. A swelling in the epigastrium was first noticed six months previously; she became considerably better in a few days, but six weeks later vomiting recurred. (September 17th.) She improved again, but on 4th October had a rigor and the temperature rose to 104·2 degrees. Next day she vomited more than a pint of pure bright blood in the morning, and one and a half pints of blood with a very bad smell in the afternoon at 3 o'clock, and at 5 o'clock another pint, when she suddenly died. At the post-mortem two hydatids were found in the liver the size of tennis balls. One had clear fluid and no daughter cysts; the other was crammed with cyst membrane, and had evidently been a cyst which had been very large and had undergone spontaneous cure and contracted. There was another smaller hydatid cyst on the under surface of the liver. A cavity was found on the under surface of the liver opening into the stomach near the pylorus. The ulcerated surface had opened into a large branch of the portal vein. Apparently this cavity had originally contained a large hydatid cyst which had broken into the stomach, and the gastric juice passing into the cavity had digested its walls till a branch of the portal vein was opened with the fatal result.

1889. Dr. Lyons (*A.M.G.*, February, p. 135: Daughter cysts from hydatids of the liver shown before the Medical Society of Queensland).

J. B. Ross, Macarthur, Victoria (*A.M.G.*, October, p. 1: "Von Volkmann's Method for *Ecchinococcus* of the Liver".) The intention of the notes in this case was to show the value of this method for use by a general practitioner. Two successful cases detailed—one being a boy of 9 years, which proved to be a very troublesome case to deal with in which symptoms of "local asphyxia" developed at times in the extremities.

J. D. Thomas, Adelaide (*A.M.G.*, December, p. 72: "Enormous Ecchinococcus Cyst of the Liver which filled the greater part of the Abdomen and Pelvis, simulating Ascites; Laparotomy—Cure.") A man aged 25 years; lived at Gawler.

The

The hydatid grew from the under surface of the liver; over two-thirds of a bucketful of puriform fluid and daughter cysts were removed. The daughter cysts were several hundreds in number, in size from a pea or less to that of an orange. The abdominal organs were displaced into the neighbourhood of the spleen. An invasion of bile had evidently killed the mother cyst and most of the daughter cysts.

1890. B. Poulton, Adelaide (*A.M.G.*, May, p. 198: "Two Cases of Hydatid of the Liver"). One was a man 57 years old. Broncho-pneumonia, which was present, did not interfere with the success of the operation. The second was a man of 25 years; suppurating hydatids with daughter cysts. This case illustrated the great difficulty in evacuating early and completely all the contents of an hydatid sac, notwithstanding free incision and careful irrigation.

James Graham, Sydney (*A.M.G.*, July, p. 250: "Exploratory Puncture in Hydatid Cyst, with notes on a fatal case of Multiple Hydatids of the Liver"). The patient was a man 66 years old. The hydatid was tapped and he collapsed one minute afterwards and died in fourteen hours. At the post-mortem the liver weighed eleven and a half pounds and contained three large cysts; there were also three small ones in the left lung. In the peritoneal cavity there was half a pint of blood-stained fluid.

Dr. Graham recommends as a result of this and previous experience that exploratory puncture into hydatid cysts should only be made just before the surgeon opens into the supposed cyst.

Dr. Gardner, Adelaide (*A.M.G.*, December, p. 80). At a meeting of the South Australian Branch of the B.M.A., this case was exhibited. The patient was a man with an hydatid of the liver opening into the lung, which was undergoing cure without operation. An operation could not be performed owing to mitral disease.

B. Poulton (*A.M.G.*, December, p. 80). At a meeting of the South Australian Branch of the B.M.A., a girl of 6 years was shown who had been operated on first for an hydatid of the liver, then for one of the left lung.

1891. Professor Watson, Adelaide (*A.M.G.*, August, p. 331.) At a meeting of the South Australian Branch of the B.M.A. Professor Watson showed a specimen from a woman 39 years old, who had had an immense hydatid. The cyst had been cut into and evacuated a week before death. Thrombosis of the inferior vena cava was present.

1892. W. W. Ewbank, Adelaide (*Australasian Medical Gazette*, September, p. 341: "Hydatid of the Liver.") Operation by incision over the liver; seven quarts, without any fluid, of daughter cysts removed; uninterrupted recovery.

F. C. Stevenson, Logford, Tasmania (*A.M.G.*, October, p. 376: "Hydatid Rash with Cardiac Collapse after simple Puncture"). A cyst in the right lobe of a young married woman; ten ounces of fluid were evacuated by trochar. Within ten to fifteen minutes there was profuse urticaria with both eyes greatly ecchymosed and the face swollen to disfigurement; also alarming symptoms of cardiac collapse and vomiting with the radial pulse imperceptible. There was no complete loss of consciousness. This condition lasted for two hours and the rash for thirty-six hours. There was uninterrupted recovery. The presence of blood mixed with the last two or three ounces withdrawn seemed to indicate that fluid had gained access to the circulation.

1893. A. A. Lendon, Adelaide (*A.M.G.*, March, page 81: "Seven Cases of Hepatic Abscess"). In this article two cases are detailed in full which showed multiple pyæmic abscesses secondary to hydatid disease of the liver; both died. In one, the patient, a boy of 11 years, had coughed up a pint of fluid tasting like "rotten eggs" the day before his admission.

Dr. Mullally, Ballarat (*A.M.G.*, July, page 237), before the Ballarat Branch of the British Medical Association, read notes on a case "of sudden death in a patient suffering from hydatid tumour of the liver." The girl was 24 years old. There was no organic disease. Death was attributed to syncopy from pressure of the cyst on the heart.

J. C. Verco, Adelaide (*A.M.G.*, September, page 295: "Hepatic Hydatid—Ruptured by Accident into the Peritoneum—Removed by Incisions into the Abdomen and Lung—Recovery"). Full details are given of this interesting case.

R. Stewart (*A.M.G.*, September, page 302: "A Case of Hydatid of the Liver simulating Gallstone Colic"). There was a calcified cyst communicating apparently with the gall-bladder, which latter was filled with foul-smelling semi-purulent fluid. Recovery after treatment by incision and drainage.

H. C. Garde, Maryborough, Queensland (*A.M.G.*, September, page 316: "Notes on a case of Hydatid of the Liver, treated by Incision and Drainage.") The patient was a girl of 19. Dr. Garde states that hydatid disease was comparatively rare in this district.

J. A. G. Hamilton, Adelaide (*A.M.G.*, October, page 338). At a meeting of the South Australian Branch of the British Medical Association, Dr. Hamilton showed some blood clots and a small piece of hydatid membrane removed from a very large hydatid tumour of the abdomen, apparently of the liver. The material obtained, in addition to a small piece of hydatid membrane, was considered to be probably organised blood derived from hæmorrhage into the cyst.

A. Lendon, Adelaide (*A.M.G.*, December, page 410.) At a meeting of the South Australian Branch of the British Medical Association, Dr. Lendon exhibited an instance of spontaneous cure of Peritoneal Hydatid found in the pelvis of a woman who died of rupture of a suppurating hydatid of the liver.

Samuel Smith (*Australian Medical Journal*, vol. 15, page 239: "Hydatid Cyst of Convex Border of Right Lobe of Liver—Laparotomy—Recovery. Under the care of Mr. Duncan"). A woman of 28. This was the third operation for hydatid disease in ten years. The first was subcutaneous, the size of a closed fist, at the inferior angle of the right scapula; the second consisted of two cysts on the left lobe of the liver; the present one of a cyst deep in the right lobe, which gave a good deal of trouble in operating from diffieulty in controlling hæmorrhage.

Professor Allen, Melbourne (*Australian Medical Journal*, vol. 15, page 394: "Suppurating hydatid of the right lobe of liver, perforating the diaphragm and causing septic empyema"). The specimen was exhibited by Professor Allen. There was also another separate suppurating hydatid in the left lobe. The liver showed numbers of secondary foci of necrosis and suppuration. There was no pyelephlebitis or abscesses in other organs.

Discussion before the Medical Society of Victoria on Bond's method of evacuating an hyadatid cyst and and sewing up *in situ*. (*Australian Medical Journal*, vol. 15, page 602.) Dr. Moore showed a successful case. Mr. F. D. Bird a case, successful, on which, four years before, Lindemann's method was adopted for another hydatid. Mr. C. S. Ryan had tried the operation in a case where the pelvis was full of cysts. Several cysts were left behind and suppuration occurred. Dr. Gardner, Mr. Syme, and Dr. Moore discussed the operation or detailed further cases.

1894. J. W. Dunbar Hooper (*A.M.J.*, vol. 16, p. 110.) In a "Table of Abdominal Sections," mention is made of Lindemann's operation on a large hydatid of the liver with recovery.

R. A. Stirling, Melbourne (*A.M.J.*, vol. 16, p. 185: "Multiple Suppurating Hydatids of the Liver"). The patient was a girl of 11 years who had lived at Carlton, Melbourne, all her life. She had been tapped by her own doctor, but rapidly refilled. She was admitted to hospital flushed, feverish and sweating. Several separate suppurating hydatids—one with clear fluid—were found. Operated on on several occasions, recovery resulting.

W. A. B. Potts, Victoria (*Intercol. Qrt. Jnl.* of *Med. and Sur.*, vol. 1, August, page 168: "Spontaneous opening of an Hydatid Cyst of the Liver through the Abdominal Walls"). The patient, a boy of 15 years, had been aspirated for hydatid of the liver five years previously. There was now a discharge from the navel. A cyst as large as a goose egg could be felt in the liver. The sinus passing towards this was dilated by gum catheters and a drainage tube inserted, and eventually a considerable amount of laminated membrane came away.

1895. A. Mueller, Yackandandah (*A.M.G.*, February, p. 43: "Large Hydatid Cyst (probably congenital) in a child of three years of age cured by a radical operation"). There were two large cysts, one in the lower part of the mesentery, the other in the liver. The latter only was operated upon at this time. It was found to be sterile with no daughter cysts and the membrane was very thin. Although in the account of the operation there is a reference to a cyst membrane on the ninth day presenting at the right side of the tube and being removed apparently in one piece with forceps, it does not seem clear that this case was really one of hydatid disease, the suggestion in the title to the paper that it was probably congenital adding to this view.

B. Poulton, Adelaide (*A.M.G.*, July, p. 287.) A man was exhibited at a meeting of the South Australian Branch of the B.M.A. who had been operated on for radical cure of an hepatic hydatid by Lindemann's operation and in whom a biliary fistula had persisted ever since.

J. A. G. Hamilton, Adelaide (*A.M.G.*, September, page 363.) At a meeting of the South Australian Branch of the B.M.A., the viscera of a woman who had died after an operation for a large abdominal tumour, presumably an ovarian cyst, was shown. This cyst proved to be a large hydatid of the inferior margin of the liver which connected by a small opening with a second suppurating cyst which was closely adherent to the fundus of the bladder. The large cyst burst during manipulation. The peritoneal cavity was copiously douched and a drainage tube inserted, but the patient never rallied.

G. A. Syme, Melbourne (*A.M.G.*, October, p. 412). At a meeting of the Victorian Branch of the B.M.A., Dr. Syme showed a case of "Hydatid of the Liver treated by the Intraperitoneal Method." The patient was 18 years old. The cyst was large, with daughter cysts. After opening it was irrigated with sterile boric lotion and the adventitious capsule dropped back. There was a slight temperature for several days. On the thirteenth day foul pus escaped from the wound; the temperature then immediately became normal and recovery resulted.

Wm. Gardner, Adelaide (*I.Q.J. of Med. and Surg.*, vol. 2, November, p. 254: "Hydatid cyst of the Liver—Rupture into Peritoneal Cavity complicated by Pregnancy—Recovery"). Apparently rupture had occurred, into the peritoneal cavity, of an hydatid cyst of the liver, whose site was later felt at the laparotomy. At the first operation a sage-green fluid containing pus cells was removed from the abdominal

abdominal cavity. The patient aborted three days later. A week later several pints of puriform fluid with daughter cysts were removed from the abdominal cavity.

1896. B. Poulton, Adelaide (*A.M.G.*, May, p. 194.) At a meeting of the South Australian Branch of the B.M.A. a young man was shown who had had multiple hydatids. A year previously a small, deeply-seated hydatid cyst pushed forward the liver capsule, and presumably pressed on the hepatic duct. It was treated by aspiration, and the incised sac was not closed. Then an hydatid of the dome of the right lobe was removed by a thoracic incision. This was followed by a cyst from the left lung, which had perforated the diaphragm and connected with the left lobe of the liver, as shown firstly by a free flow of bile after the operation, and a fortnight later by the immediate escape through the thoracic incision of anything swallowed. Complete recovery.

W. McMurray (*A.M.G.*, May, p. 185: "Hydatid Eruption"). A man of 36 years of age who had had a skin eruption for two years. This was itchy; there were numerous excoriated papules. He was later seized with severe abdominal pains, and operated on in the Sydney Hospital by Dr. Chisholm for hydatid of the liver. The eruption disappeared next day.

J. A. Reid, Gippsland (*I.M.J. of Australasia*, vol. 1, p. 419: "Hydatid Cyst of the Liver"). The patient was 40 years old, and had had an hydatid of the liver for four years, which had been treated by incision and drainage. Portion of the parent cyst was left behind. The patient was admitted with intense jaundice. A suppurating hydatid in the right lobe was opened and the sac stitched to the abdominal wall. Numerous daughter cysts were removed, but no parent cyst was found. Dr. Reid supposes that the daughter cysts had developed from the scolices left behind in part of the original membrane. Recurrent jaundice during convalescence was referred to catarrh of the bile ducts from over-eating.

E. S. Jackson, by permission of Dr. C. F. Marks, Brisbane (*I.M.J. of Australasia*, vol. 1, p. 531: "Notes on a Case of Hydatids of the Liver presenting several unusual Features"). The patient was an elderly woman. Eight years ago she had been operated on by Dr. Marks for hydatid of the liver. The size of one cyst was that of a large orange. There was no endocyst. A number of nodules felt on the liver were found to be small cysts "in such numbers that it was difficult to find any liver surface between them." There were hundreds from the size of split peas to walnuts. No hooklets were found in the fluid from the large cyst. Since then the patient had been tapped on twenty-nine occasions. From half a dozen to twenty cysts were tapped at a time. The largest was probably no bigger than a hen's egg. They were tapped from the upper surface. When the largest ones were tapped, a depression was seen over the liver which disappeared in a few hours. Later a fluctuating swelling developed in the groin, which was aspirated, and a little blood only obtained. The fluid from one cyst had a sp. gr. of 1003. There was no albumen; chlorides in abundance; no hooklets; doubtful scolices; copious phosphates.

Hydatid disease is not common in Queensland, and in reporting this case Dr. Jackson had some doubt as to the correctness of the diagnosis.

1897. F. A. Newman (*I.M.J.*, vol. 2, p. 602: "Encysted Abscess in Peritoneal Cavity, secondary to suppurating Hydatid of the Liver"). Under the care of Mr. G. A. Syme. The abscess in the peritoneal cavity was connected by an hour-glass constriction with a large suppurating hydatid cyst apparently situated on the under side of the right lobe of the liver, containing one-and-a-half pints of pus, with mother and daughter cysts.

R. B. Duncan, Kyneton (*A.M.J.*, vol. 2, p. 613: "Emptying of Hydatid Cyst"). This was a case of hydatid of the liver illustrating how, after apparently all the daughter cysts are completely removed, others escape in the dressing afterwards, indicating in such cases that Lindemann's method is safer than Bond's or Russell's.

1898. R. A. Stirling, Melbourne (*I.M.J.*, vol. 3, p. 17.) Reference to a suppurating hydatid of the liver which was operated on on 4th April, 1897, the patient dying from multiple abscesses of the liver on 5th July, 1897.

Dr. O'Hara (*A.M.G.*, August, p. 356.) At a meeting of the Victorian Branch of the B.M.A., a calcified hydatid cyst of the liver was shown from a patient 43 years of age. This was excised *en masse* and the cut liver surface sutured.

Professor Watson (*A.M.G.*, October, p. 442.) At a meeting of the South Australian Branch of the B.M.A. a burrowing form of hydatid of the liver in a woman of thirty years, who had been under the care of Dr. Way, was shown.

1899. R. A. Stirling, Melbourne (*I.M.J.*, vol. 4, p. 84: "A Year's Surgical Operations"). A case of rapidly growing hydatids of the liver. These were first noticed two months previously. The tumour occupied nearly the whole of the abdomen. This was the largest abdominal tumour connected with the liver that Dr. Stirling had seen. There were two large sacs tightly packed with daughter cysts, the tight packing apparently accounting for the absence of fremitus. The patient died five days later. Both sacs were much inflamed. He had only seen one other case of inflamed sac, which had been under the care of a colleague, and in which the patient had also died.

Charles

Charles MacLaurin (*A.M.G.*, February, p. 71: "A Case of Suppurating Hydatid of the Liver"). This case was detailed to illustrate the value of stethoscopic percussion—the rod plexímeter percussion of Vierordt—in locating an hydatid of the liver containing gas with pus and decomposed daughter cysts. The patient had been operated on for a previous hydatid of the liver a few months previously.

R. E. Shuter, Port Augusta (*A.M.G.*, June, p. 246, "Notes on three cases of Hydatid of the Liver"). One case in an aboriginal.

1. Woman, 25 years old. Jaundice from mechanical obstruction. Foul smelling gas, pus, and broken down membrane evacuated. Recovery.

2. Aboriginal woman, aged about 40. Nine hydatid cysts attached to the omentum or bowel were removed through three incisions. Six weeks later two quarts of hydatid membrane and tags of omentum were removed through four incisions. A large hydatid was felt attached to the under side of the liver. This was not removed owing to the patient's condition. Recovery of the patient with the abdomen apparently clear.

3. Man, 32 years old. A large sterile mother cyst removed by Russell's method. A fortnight later rise of temperature and swelling. An operation showed that the cavity contained foul gas, pus, and a piece of hydatid membrane presumably left behind.

The author favours, in conclusion, Lindemann's operation to Russell's for hydatid cysts the interior of which cannot be seen.

(*b*) INJURIES AND DISEASES OF MAN IN AUSTRALIA ATTRIBUTABLE TO ANIMALS, EXCEPT THOSE DUE TO SNAKES AND INSECTS.

(No. 2.)

(J. B. Cleland.)

In the *Australasian Medical Gazette* of September 14th and 21st, 1912, a description was given of the various injuries and diseases from which man had suffered in Australia which were attributable to animals, insects being dealt with in another communication. It was recognised at the time that the summarised account therein given was probably very imperfect; and further search through medical literature and the accounts of exploring expeditions in this Island Continent, have revealed the following further instances of injuries or disease attributable to such causes. I am also indebted to private communications for still other additions.

Class Mammalia.

Injuries from Man.

Soon after the arrival of the First Fleet at Port Jackson, friction occurred between some of the convicts and the natives, the fault probably lying with the former. In a letter from Governor Phillip from Sydney, dated 9th July, 1788 ("Historical Records of Australia," Series I, vol. 1, p. 47), there is a reference to one of the convicts being "very dangerously wounded in the back by a spear." On the next page of the same reference it is stated—"30th May. Two men employed collecting thatch some distance from the camp were found dead—one of them had four spears in him, one of which had passed through his body; the other was found at some distance dead, but without any apparent injury."

On 7th December, 1839, Captain Stokes (Stokes' "*Discoveries in Australia*," vol. 2, p. 108), who was conducting his well-known exploring expedition around the northern coasts of Australia, was speared by natives in the left shoulder. This attack occurred at Point Pearce, and the spear pierced the thick muscles of the chest and evidently entered the lung, as air escaped from the wound. Fortunately he managed to make good his escape, being saved from death by the opportune arrival of his boat's crew. Eventually he recovered, apparently completely.

On 7th August, 1821, at Hanover Bay, near Prince Regent's River, in Northern Australia, Mr. Montgomery, the surgeon to King's exploring expedition along the coasts of Western and Northern Australia, was speared by blackfellows (King's "Survey of the Intertropical and Western Coasts of Australia," vol. 2, p. 65).

Dr. Andrew Ross, of Molong, New South Wales (*New South Wales Medical Gazette*, vol. 1, p. 44), describes a spear wound of the abdomen, with subsequent recovery of the patient.

Searcy, in his book entitled "In Australian Tropics" (1909), makes several references to white men who were wounded by the spears of aborigines. Though this work is in narrative form, and in this sense probably fiction, the incidents recorded of this nature are presumably facts. On page 204 he refers to two teamsters, one of whom received a stone spear in his thigh which wounded him seriously, and the other was first speared in the back, the stone end entering his lungs, and immediately afterwards a glass-headed spear nearly removed his nose. The glass head broke off and remained in the wound till he reached Darwin for medical treatment. The two had kept the aborigines at bay for several days, and eventually made their escape on draught horses.

On

On page 234 reference is made to a buffalo-shooter who was struck in the shoulder by a barbed spear, which penetrated 3 inches. He tried to draw it out, but not being able to, dismounted and broke the spear off. He reached Port Darwin for treatment and was soon well again.

On page 236 he says that the Melville Island spears are "big, clumsy things, some ten or twelve feet long, some with single, others with double rows of barbs, and others again simply pointed. Even at the short distance of fifteen yards the spears are too heavy to be thrown straight, but are projected with a curve and reach the object aimed at in a slanting direction. They cause nasty wounds. In one black boy who was speared the weapon entered several inches into his back, and though he was taken to Port Darwin he died, it being impossible to remove portion of the barbed spear."

Injuries from Monotremes.

The Venom Gland of the Platypus.—Dr. F. Tidswell, in his "Researches on Australian Venoms" (Dept. of Public Health, N.S.W., 1906) gives a resumé of the recorded cases of injuries from the spur of the male *Ornithorhynchus paradoxus*, and of investigations into the poison gland associated with this spur. I have nothing to add to his account.

Class Aves.

In my previous paper, references were made to injuries received from Australian "Magpies" (*Gymnorhina*), the wedge-tailed eagle, and crows. The following additional species are recorded as having caused injuries to man :—

Cassowary (*Casuarius australis*).—"Is a skilful fighter. It hits out with such force and precision that a weaponless man who stands before the bird when it is angry and vicious is ridiculously overmatched. The great bird is so quick that you do not realise that it has got its blow in first until you see the blood flow. It strikes with its middle toe, and that toe is a lance, keen if not bright." (Banfield, "My Tropic Isle," p. 189)

Kingfisher (*Syma flavirostris*).—"Attacked Mr. McLennan when taking its nest from a tree, drawing blood from his hand." (North Queensland.) (McGillivray, *Emu*, January, 1914, vol. 13, p. 159.)

Class Reptilia.

Injuries from Crocodiles.

Spencer and Gillen ("Across Australia," vol. 2, p. 487) saw at Borrolook two or three natives who were terribly scarred. This was said to have been done by crocodiles. One had lost the greater part of one hip and thigh.

Searcy, in his "Australian Tropics," refers to human beings being attacked by crocodiles, or, as they are improperly called in the Northern Territory, "alligators," on pages 244, 268–9. He also mentions (page 264) that a resident in Darwin cooked a piece of alligator's flesh and ate it, with violent emetic results.

Following on the appearance in the *Australasian Medical Gazette* of my first compilation on these injuries and diseases of man, Dr. E. J. Leary, of Innisfail, Queensland, wrote a letter to that journal (November, 1912, page 469), recording the only fatality from crocodiles which occurred during his residence of seventeen years on the Johnston River. A man was seized whilst wading around the outside of his nets and was carried away up the river. Three days later his body was found. Both arms had been chewed off close to the arm pits, leaving long streams of tendons floating beside the body. A peculiar fact in connection with this case was the absence of decomposition, though the body had been seventy-two hours in the water, and another was that it was absolutely nude when found, whereas the man had been clothed when taken. Dr. Leary had heard of other bodies having been stripped in the same way.

Injuries from Lizards.

Giant Monitor (*Varanus giganteus*).—Dr. E. C. Stirling, F.R.S., in recording some of the habits of this large Central Australian monitor (in the *Transactions and Proceedings of the Royal Society of South Australia*, vol. 36, 1912, p. 29) refers to the habitual use of the long and muscular tail as a weapon of defence. He mentions that Mr. Gillen had seen a native woman knocked down by a blow received on the legs from this animal's tail. This monitor has also the habit of running up trees in its efforts to escape when pressed hard, and they have been known also to run up a man or a horse, mistaking these vertical bodies for trees. On one occasion Mr. Gillen had, at Alice Springs, treated the lacerated breasts of a lubra who had been attacked by one of these animals. He was informed by the blacks, who have a fear of these animals, that such attacks are not uncommon. Probably here again the individuals have been mistaken for trees. The lacerations are probably due to the very sharp and strong claws, and perhaps even sometimes to the teeth.

Class Pisces.

Injuries from Sharks.—Dr. H. B. Oxenham, in 1912, kindly gave me the following information about a case of shark bite which had been under his care. "A young man was admitted by me to the Newcastle Hospital about 2½ years ago with his right lower limb amputated by a shark, about 8 inches from the hip-joint. The wound was as clean a one as if done by a saw, the sciatic nerve protruding from the perfectly level stump about 2 inches, being the only irregularity on the raw surface. There was no hæmorrhage

on

on admission, and the bags covering him were unstained by blood. The man about thirty minutes previously had dived off the wharf in the harbour right on top of the shark, which immediately inflicted the above injuries. On coming to the surface the man warned a friend, who was about to dive, not to do so, as he had been bitten by a shark. He swam ashore unaided and was assisted at the landing and sent to hospital. The stump was trimmed and vessels secured, but a few hours afterwards the patient died of the previous hæmorrhage and shock. The species of shark was not known."

I have also a comparatively recent newspaper reference to the case of a Mrs. S., at Sandgate, near Brisbane, who on 18th January received lacerations on the leg from a shark whilst bathing in water 3 or 4 feet deep, and suffered from loss of blood and shock. Another newspaper extract details the case of H.B., a boy of 12 years, who in the same locality was bitten on the left leg and hand by a shark whilst bathing in only a few feet of water. "The whole of the flesh on the calf of the leg between the knee and the ankle was bitten off to the bone, while the shark's teeth had also lacerated the flesh on the back of the thigh above the knee. The back of his left hand was also lacerated as if he had put his hand down to defend himself, and the shark had grabbed at that also. The lad is in a critical condition."

Dr. H. W. Devlin, of Manly, has kindly given me the following information in reference to a man who was attacked by a shark whilst bathing in the surf near Manly early in November, 1915. The patient was seen immediately after the accident, and Dr. Devlin goes on to say :—

"Your observation *re* clean cuts was well founded in this case. The outstanding impression on seeing him was that the injuries were produced by a scarifier. There were several scratches, but the main injuries were at the posterior aspect of the malleoli, and there in place of (as I expected to see) ragged wounds, the incisions could not have been made cleaner with a scalpel. Another striking, and to me astonishing feature, was the complete absence of hæmorrhage. This came on about twenty minutes later. He, the patient, was naturally suffering from shock, and had been in the water one hour before the accident occurred. He had been in deep water, and was attacked, he tells me, when in about 3 feet of water and quite near the shore, thus dispelling the belief that sharks will not come on sandbanks."

The patient's statement as to what happened, was that he was caught by something by the foot whilst in shallow water, and was pulled on to his face in the water. He felt no immediate pain, but a curious thrill went through his body, and he dug his hands into the sand and kicked and struggled against the unknown force, which was dragging him out to sea. He shook himself free until he found himself gripped by the other foot, and he then realised that it was a shark that had him. Scrambling to his feet he called to those around him that he was attacked by a shark. He fought and kicked the brute, which savagely held on to his legs, and finally succeeded in getting out of its clutches.

Injuries from Sting-Rays.—Mr. R. H. Cambage, in a discussion at the Royal Society of New South on my previous paper, referred to a case of injury from a sting-ray in 1877. The patient was a young man, who was pierced near the ankle. He suffered from intense pain, and later a discharge from the wound, and was lame for three weeks afterwards.

It may be of interest to give here the following quotation from *Nature* (May 4, 1916, p. 214) of a communication made by Major H. M. Evans to the Zoological Society on 18th April, dealing with the poison organ of one of the sting-rays :—"The poison organ of the sting-ray (*Trygon pastinaca*). It has been observed for centuries that the wounds produced by the serrated spine growing from the base of the whip-like tail of the sting-ray produced very severe injuries and pain and inflammation, which could not be accounted for by the laceration of the wounds alone. Dr. Antonio Porta, in 1905, described a gland in the groove lying medially to the rows of teeth on either side, which he stated is similar to the gland found in *Scorpæna*. Major Evans's researches do not confirm Porta's description in all particulars. The examination of a series of sections shows a gland of a different type from that found in the weavers, *Scorpæna*, &c. The points emphasised are :—(i) The origin of the gland from a special epithelial structure at the base of the spine ; (ii) the arrangement of follicles discharging their secretion by ducts or canals, communicating with the exterior by means of nipples or filaments ; (iii) the arrangement of these nipples at the base of the teeth ; (iv) the presence of muscular fibres surrounding the main canals, which are instrumental in discharging the venom."

The Bullrout (*Notesthes robusta*).—In a discussion (unrecorded) before the Royal Society of New South Wales, Judge Docker referred to the following case of injuries inflicted by this fish on the Tweed River. Great pain was at once felt; strong ammonia was applied; the agony was excruciating for some hours, accompanied with much perspiration; the patient could not sleep. Next day the foot was much swollen, and remained so for several days, a red spot indicating the part bitten. The patient was naturally not able to get his boot on.

Leighton Kesteven (*Proceedings of the Linnean Society of New South Wales*, 1914, Part I, page 91) has an article on the venom of this fish. He refers to the Bullrout in the Northern Rivers of New South Wales, where he had frequently been brought into contact with cases of injury from this fish. He agrees with Tenison-Woods's description ("Fish and Fisheries, New South Wales," 1882, p. 18), save that the pain does not disappear at sunset. He

He refers to Ogilby ("Edible Fish of New South Wales," 1893, p. 68; *Proc. Royal Society of Queensland*, vol. 18, 1903, p. 21), whom he considers dismisses the idea of the spines of the Bullrout being toxophorous without sufficient justification. He says: "The symptoms are in no way confined to the mere pain and discomfort of an ordinary cut or scratch, or the irritation arising therefrom. There are very marked and distinct symptoms of the direct effect of venom. The first of these to manifest itself is the rapid appearance of an erythematous blush, which spreads around the wound for some distance, in a manner not noticeable in ordinary incised wounds; the pain is out of all proportion to the very insignificant nature of the injury; it radiates in an altogether abnormal manner, compared with ordinary pricks or scratches, in many cases extending to the shoulder, or even up the side of the neck. The temperature varies greatly, in most cases going up two, three, or more degrees within a very short time; lasting thus for a varying time, and going down again as rapidly, often below the normal, when severe collapse occurs, necessitating the free administration of stimulants to counteract the heart-failure which threatens."

Cases treated as in the ordinary methods for snakebite—he has found permanganate the most efficacious—can be relieved considerably if taken in hand soon after the "sting"; but if the poison has had time to put in its fine work, so much the longer does the recovery take. Extreme prostration, for several days, often follows the "stings," leaving the patient weak and exhausted.

He considers these symptoms as not compatible with non-toxic wounds, and that they are undoubtedly venomous.

Toad Fish.—There is a reference in Lieutenant Grant's Journal whilst at the Hunter River in June, 1801 ("Historical Records of Australia," Series I, vol. 3, p. 171), to three castaways seen near Port Stephens, one of whom "ate toad-fish, which he complained of for some days and died."

Dr. J. H. L. Cumpston has given me the following reference in "Flotsam and Jetsam," by Henry Button, page 72, to further instances of poisoning by toad-fish. "About this time (that is, 1894) a brig came in from Mauritius, and to amuse themselves on the Sunday the crew started fishing, and having caught and eaten a number of toad fish they became dangerously ill, whether fatally or not I forget."

Rev. W. Wyatt Gill, in "Life in the Southern Isles," thus refers to fish which were poisonous when eaten—"On the outer edge of our coral reefs exists a sea-centipede (*Nereis*), in appearance like a black thread slowly moving amongst the rugged submarine growths. The *ae* attains the length of five or six feet. Good fish become poisonous through feeding on these sea-centipedes. Strangely enough, fish that are excellent eating on one island may be poisonous on another. Thus the dainty *matakiva* of Mangaia is poisonous on the neighbouring island of Mitiaro. A chief of that atoll, hearing that it is much prized on Mangaia, concluded it was a mere fancy of his countrymen that it should be hurtful at Mitiaro. Accordingly he ate one, and died a few hours afterwards."

Phylum Mollusca.

Poisoning from eating Mussels.—The following account given by Vancouver (Vol. 4, p. 45) occurred on the north coast of America, near Fitzhugh Sound, in June, 1793, a description of which may be included here as Vancouver touched King George's Sound on his way to America. "A boatload ate some muscles (*sic*) and rested, soon after several of them were seized with numbness about the face and extremities and later their whole bodies, and they were attacked with sickness and giddiness. Four of those affected tried sweating themselves by rowing, and remained alright until they stopped. One man died, collapsed at about 1·30 p.m., the muscles (*sic*) having been eaten at 8 a.m. and the symptoms beginning at 9 a.m. The pulse gradually grew fainter, the lips turned black, the hands, face and neck were swollen."

Idiosyncrasy to particular species of Oysters.—Dr. D'Ombrain has kindly given me the following particulars, showing a marked idiosyncrasy to a particular species of oyster with immunity to another species. "E.D., up to the age of about 40, resided in Britain. During this period used to eat the oysters obtainable there, such as Whitstable natives and others. On residing in Australia and indulging in the oysters obtainable in Melbourne (chiefly the Sydney rock-oysters) would become suddenly ill with violent retching pains in abdomen and general prostration and collapse. As this occurred each time of partaking of them he refrained from so doing until one day he was induced to try the Stewart Island (New Zealand) oysters, and much to his delight found no ill effect afterwards. Seeing this he was once more tempted to eat the Sydney ones, but with the same dire results.

"The Western Port (Victoria) mud oysters were at times eaten by him, but no harm resulted, just as in the case of the New Zealand ones."

Death from bite of shell fish, *Conus textilis*.—Mr. Chas. Hedley has kindly called my attention to the following interesting case recorded by Rev. W. Wyatt Gill in "Life in the Southern Isles":—

"A strange instance of poisoning occurred on the Island of Mare. On a Monday morning the 'John Williams' anchored off the station of the Rev. J. Jones. For a long time no notice was taken of our visit, not a canoe came off. When at last the missionary pulled off to us in his boat, we anxiously inquired the cause of delay. Mr. Jones had been burying a poor man who had been poisoned by handling a 'fish.' After attending the services of the Sabbath, the thoughtless fellow went fishing on the reef at sunset

sunset. In the doubtful light he unhappily took up a good-sized shell-fish, and put it in his basket. He immediately felt a painful sensation running up his right arm to the shoulder. He went home. The pain increased until he writhed in agony. The body swelled to an enormous size, and by daylight he was a corpse. So remarkable did this seem to me, that I requested a sight of the shell-fish which poisons by the mere touch, *although the kin be uninjured.* The request was kindly complied with by the friends of the deceased. I give a sketch of the identical shell, which proved to be the *Conus textilis.*

"This variety of shell-fish is well known to the natives of Western Polynesia for its dangerous qualities. A virulent poison is injected by means of numerous minute barbs connected with the mantle. These barbs somewhat resemble the sting of a bee."

Phylum Arthopoda.

Class I.—Crustaceans.

Poisonous sea-crabs.—Rev. W. Wyatt Gill, in "Life in the Southern Isles," refers thus to poisonous sea-crabs:—"The most poisonous marine animal in the Hervey Islands is the 'white-shelled' sea-crab (*Angatea*). The native dictum is 'All land crabs are good; sea crabs doubtful.' Occasionally a native in a fit of passion or jealousy commits suicide by eating the 'white shelled' crab. And yet, strangely enough, some have been known to eat these dangerous crustaceans with impunity.

"Many cases of accidental crab-poisoning have come under my own observation. An affecting instance was that of an aged member of the church and his daughter. With difficulty their mouths were forced open to admit a strong emetic; the old man died the same night, but the daughter survived.

"Another case was of a middle-aged man who ate a 'white-shelled' crab whilst his wife was at the early morning service, which never exceeds an hour. To her horror, upon her return home she found her husband dead.

"Native preachers aptly compare sin to this deadly crustacean, as, despite its frequently fatal effects, many indulge in it."

Class III.—Myriapoda.

Centipedes.—During Dr. Mjoberg's expedition to North-western Australia in 1911, large centipedes up to 10 inches long were often found in the blankets. Dr. Mjoberg himself was bitten on the finger and on the shoulder, and had his arm in bandages for three weeks. Apparently the smaller centipedes, some 2 or 3 inches long, were the most poisonous.

Dr. Quaife has kindly given me the following details of a case of centipede bite in an old lady of about 60 years of age:—The centipede had bitten her upon one of the longer fingers about the middle of the palmar aspect of the second phalanx. A poultice had been applied as soon as the swelling and redness appeared. In the course of a few days inflammation and pain became very intense, and at this stage Dr. Quaife had seen the patient. It was found that purulent infiltration had occurred, extending to the tendon sheaths and adjacent small joints. Incisions were made and suitable treatment applied, and recovery occurred, with a stiff finger.

Class V.—Arachnida.

Order Acarida—Mites and Ticks.

Injuries by Mites.—Elsewhere in this report (p. 253), E. W. Ferguson records several instances in which the mite, *Leiognathus bacoti*, Hirst, infesting rats has caused great inconvenience in Sydney to persons working in factories and shops.

In 1874 A. T. Gunning (*Australian Medical Journal*, vol. 19, p. 244), records the finding of living Acari in the urine. The patient had previously had hæmaturia from the urethra and renal abscess, and then tuberculosis of the lungs. The urine contained albumen. The living Acari were seen seven times in succession in the urine. The urine passed by the patient in the doctor's presence into a scalded urinal showed their presence. They resembled *A. scabei*, and had eight legs, a sharp triangular head, and an egg-shaped body. The legs did not seem pendant, like bags, as in *A. scabei*. In spite of the care taken by Dr. Gunning in this case to exclude the entrance of acarids after passing the urine, it seems probable that they were really adventitious. In parts of Australia, acarids are numerous in the surroundings of man, and not infrequently we have found them present in specimens of urine, presumably having gained this position from the air, by means of dust, etc.

In 1904, in Dermatological Notes, Herman Lawrence (*Inter. Med. Jnl.*, vol. 9, p. 143), describes the presence of acarids, the parasite having been the cause of skin trouble in the suburb of Kew, Melbourne. They produced a papulo-vesicular dermatitis with marked irritation, chiefly upon the exposed parts, and also on the chest and back. The parasite had eight legs, which were seven-jointed, and then ended in a bifurcated hooklet. The antennæ were short and the palpæ styliform. The cephalo-thorax and abdomen were united into one piece, showing that it belonged to the Arachnida acarida. It closely resembled *Leptus autumnalis* and *Leptus americanus*; however, Mr. French, the Government Entomologist, was not satisfied as to its classification.

In 1913 Dr. B. Poulton, of Adelaide, sent us a photograph of a small mite, apparently some species of *Trombidium*, which was causing a good deal of trouble in the south-east

south-east of South Australia, near Robe. Dr. Poulton informed us that people who lived there, or visitors shooting and picnicking, were attacked. The specimens in his possession were secured by the victim placing his hand on the grass and waiting quietly, when the mites were picked off. He had previously been out shooting duck and put his hat down on an open patch of grass in the scrub and left it there for some time. As a result the mites had collected on his hat. Twenty-four hours later the scalp became intensely irritable, and most parts of the body, except the hands and feet, were affected. Two weeks later he still showed traces of dermatitis and patches of subcutaneous hæmorrhage. He had used in treatment strong liquor ammoniæ, and subsequently formalin and white precipitate ointment. Horses were also attacked by the mite. The first case Dr. Poulton saw had occurred some years previously in a young lady. It was only after her return to Adelaide that the parasite was discovered. Dr. Poulton points out that the mite in question has no hairs like the *Trombidium* harvest-mite.

Mr. W. W. Froggatt, Government Entomologist of New South Wales, thus refers in the *Agricultural Gazette of N.S.W.* (July, 1912, p. 602) to the starling mite.—"Where starlings are numerous, as in the neighbourhoods of Melbourne and Sydney, they soon form large accumulations of their nesting materials. These heaps then become infested with a minute semi-transparent mite, which lives upon the birds themselves; and under favourable conditions the mites increase in such numbers that they often spread throughout the house, and getting into the beds and clothes of the occupants, cause a great deal of annoyance and pain by biting and sucking blood. From its minute size and colourless body (until it has sucked some blood), this mite is very difficult to detect, and it is not an uncommon thing in Sydney for a doctor to be called in to examine the suspicious red rash caused on delicate skins by the objectionable starling mite."

Mr. Laurell, one of the members of the Swedish Exploration Expedition in north-west Australia in 1911, has informed me that near Derby he had been very much troubled by a small mite or tick, which burrowed into the skin and caused intolerable itching.

The Queensland red mites, referred to in my previous paper dealing with this subject, not only attack human beings, but also birds. Thus S. M. Jackson (*The Emu*, Vol. 8, 1909, p. 262) refers to two Tooth-billed Bower-birds shot in Tinaroo scrubs on 13th November, which were alive with scrub-itch, "which had eaten torturing sores into them under the tail and coverts."

Order Araneida—SPIDERS.

Banfield, in "My Tropic Isle" (p. 181), refers to the following bite from a 'Tarantula':—"Tom, the black boy, felt a nip on the arm as he put on a clean shirt an evening or two ago, and, reversing the sleeve, found a tarantula. Blood was oozing from two tiny incisions, the space between which was slightly raised. For two days Tom was suffering pain in the arm, which became slightly swollen, headache, and great uneasiness."

Latrodectus hasseltii.—The venomous nature of the bite of this small black spider, with a red spot or spots on its back, is well known. The earliest reference, presumably to this species of spider, though it is described as being brown, with a yellow streak down the back, is made by Robert Carr, of Talbot, in 1863 (*Australian Medical Journal*, vol. 8, p. 87). In his article he records two cases, one from a miner who was bitten on the scrotum in a water closet. He suffered great agony, and the part affected became very œdematous. He felt great constriction in the chest, and breathed with difficulty; his heart was irregular, and its action laboured; the pulse was intermittent; the eyes were swollen and red, and there was dizziness and loss of sight. In two hours the breathing became relieved, and the symptoms disappeared in twenty-four hours, except for a feeling of weakness, and a painful tingling in the feet.

The second case was that of a woman who was bitten on the inside of the thigh. Six hours later her condition was critical. She suffered from extreme pain in the loins and abdomen, from intense dyspnœa, and from intermittence of the heart, which sometimes ceased beating for two seconds, and whose action was feeble. She also had vertigo, and her eyelids were swollen and œdematous; her countenance was disturbed and anxious-looking. Her breathing became relieved four hours later, and she recovered.

In the *Australian Medical Journal* of 1870 (vol. 15, p. 63) mention is made of a case reported in the Talbot Journal of a bite from a black spider, which was followed by great pain in the region of the heart, whilst the tongue became swollen, and there was a sensation of being pricked with a thousand needles. Pains remained violent for twenty-four hours, but were much less next day.

In 1873, in the same Journal (vol. 18, p. 190), an extract is given from the Ararat *Advertiser*, in which it is stated that a person was bitten on the foot by a black spider, which was found afterwards, crushed in the boot. He suffered very severe pain, the leg was much swollen, and he became delirious. Morphia was given, and he recovered.

In the *Australasian Medical Gazette* of 1891, several cases are recorded of bites from red-backed spiders. In the April issue (p. 193), Andrew Ross, of Molong, New South Wales, details the case of a boy, 5 years of age, who was bitten on the neck, behind the lobe of the ear. He pulled off his hat, and a black spider, with a red spot on the back, was found inside it. The boy soon commenced to scream with pains in his neck, and running down into his legs and feet. The mother picked him up, and found that he could neither stand nor walk, but kept constantly screaming with acute, violent pains in his legs and feet, as though something was pinching or twisting them. This continued for about half an hour, when he was taken to the surgery. There was a large

erythematus

erythematous circle at the spot where he was supposed to have been bitten, which was scarified and bathed with the usual remedies. The boy was exceedingly restless, and evidently in very great pain. This condition continued unabated for half an hour, and brandy was administered to him at intervals, and later emetics. At last vomiting was produced, and about three and a half hours after having been bitten he was easier. Next day the pains had considerably abated, but he was still unable to stand or walk. Convalescence then ensued, lasting two or three days.

In the same number of the *Gazette* (p. 208), an editorial on the subject of spider-bites appears, wherein reference is made to the effects of the bites of the New Zealand *Latrodectus*.

Reference is also made to the Hon. Jno. A. Cockburn, then practising at Jamestown, South Australia, who had had at least a dozen cases of poisoning by the bite of the red-spotted spider under his care. Toxic symptoms, lasting two or three days, were very marked in all the cases, and acute pains, with paralysis and profuse sweating of the lower limbs, were always present. He used strychnine in the treatment.

In the May issue (p. 224), R. S. Rogers, then of Port Wakefield, South Australia, gives details of four cases which are worth reproducing here :—

"*Case* I.—George T., aged 46, farmer. This patient is bald, and on the evening of 29th September, 1889, experienced a sharp bite on the crown of his head after putting on a hat which had not been used for some time past. On examining the hat, he found one of the spiders concealed in it. In about ten minutes he began to feel severe pain in the region of the bite. The pain gradually increased in severity, passed down the occiput, and lodged chiefly in the nape of the neck. He then vomited severely, and this continued for a couple of hours. The pains gradually extended down the spine, and then into the legs, selecting chiefly the joints of the limbs. In a similar way they spread into the upper extremities. They were greatest in intensity in the small joints of the hands and feet, and in the vertebral joints. That night the patient got no rest. He felt hot and feverish, and suffered excruciating pain. I saw him for the first time about 10 o'clock the following morning ; pulse, 100, full and bounding ; temperature, 102° ; skin, dry and hot ; complete anorexia and feeling of nausea ; paresis of the extremities much more marked in the case of the legs than the arms ; excessive pain in the small joints of the feet and hands, and also in the joints of the spine, most marked in the atloidaxoid region ; slighter pains in the ankles, wrists, knees, and elbows ; no local signs on the site of the bite ; applied poppy-head and belladonna fomentations to the extremities, and gave ¼ grain morphia subcutaneously ; was unable to see him again until the evening. His condition was very much the same. No relief had been obtained from the treatment of the morning ; relieved the bowels by means of enema, and gave two subcutaneous injections of ¼ grain morphia. This procured the patient a little sleep, and gave him comparative ease for several hours. The pains never returned with the same intensity, but for two months after the patient continued to suffer from pains of a rheumatic character in the small joints, from anorexia, sleeplessness, restlessness, and general depression. During this time he received tonic treatment, and eventually made a good recovery.

Case II.—John R., mason, aged 36, was bitten on the flexor aspect of the right wrist on the 27th January, 1890. The spider had been concealed in the sleeve of his coat. I saw the patient a few minutes later, and applied liq. ammoniæ fort. to the seat of the bite. The symptoms which followed were subacute in their character. The patient suffered from a considerable amount of pain in the part for some time after. The pain radiated up and down the arm, finally settling in the wrist and small joints of the hand. For more than a week afterwards he was also troubled with restlessness, sleeplessness, a general low tone of health, and a pricking, itching, sensation over the site of the bite.

Case III.—George B., aged 40, builder, was bitten on the scrotum, a little to the left of the raphe in January, 1890. He had occasion to go to the closet at 3 o'clock in the morning, and was bitten by one of these spiders, which had evidently carried its web across the opening in the seat. I examined the same closet a few hours later, and found quite a large number of these spiders concealed below the seat. In about five minutes he began to experience severe pain in the scrotum and testicles, although there were no signs of inflammation or swelling visible. The pain radiated down the thighs, and up the groin across the abdomen, and left side of the thorax. Patient came to the surgery an hour after the bite. He was in agony. Intense pain in testicles, in abdomen, and in region of heart. Pains running down flexor aspect of the thigh, pains in the knees and ankles, paresis of the lower extremities, patient being unable to stand without support. Pulse 100, full and bounding ; temperature, 103°. Injection of ½ grain morphia and application of belladonna and opium fomentations gave no relief. Two hours later the patient became violently delirious, and required two strong men to hold him in bed. During his delirium he vomited frequently. Delirium continued for a couple of hours, at the end of which time the patient fell into a drowsy condition, with low muttering and tossing of the arms. From this condition he could be aroused at first, and was extremely irritable when touched, but the coma increased until we found that no amount of shaking would disturb him. Pupils contracted ; pulse full and regular. In some respects the case now much resembled one of opium poisoning. At this stage we gave stimulants freely, and got relays of men to walk the patient about for most of the day. At 4 p.m. the torpor showed signs of passing off, and at 7 p.m. the patient was rational and almost free from pain. Only one subcutaneous injection of ½ grain morphia was given during his illness, and that about 4 in the morning, as above mentioned. The patient remained

remained free from pain for several hours, but about midnight the pains began to return in the joints, with great intensity in those of the hands and feet. The larger joints were but slightly affected. The subsequent course of this case was very similar to that of Case I, and it was upwards of two months before the patient regained his normal health.

Case IV.—John R., aged 26, miller, a very intelligent patient, was bitten on the anterior aspect left wrist, on the ulnar side, on the 8th February, 1890. The spider was secreted in the sleeve of his coat. Saw him a few minutes later, and found a small whitish puncture, around which was an area about the size of a crown of localised sweating. On this area the perspiration stood out in large beads. The skin elsewhere was quite dry. There was very little pain in the part, merely a sensation of pricking and slight throbbing. Applied liq. ammonia fort. to the part. Saw the patient the following morning. He was suffering from nausea and a feeling of lassitude, and informed me that he had passed a restless night. There was marked localized sweating along the ulnar side of the left forearm and on the two alæ of the nose, and on the feet. It was not usual for his feet to sweat much, yet his socks were saturated, and in the parts already mentioned the sweat was standing out in large beads. The rest of the skin was dry. Pulse 70. Severe pain in the small joints, especially in the meta-carpo and meta-tarso phalangeal joints. Also a pricking sensation in the feet and hands, and itching over the site of the bite. These symptoms gradually disappeared within a fortnight.

"The two most interesting of these cases (I and III) happened to occur at a season when I was extremely busy and unable to properly investigate them. In fact, all four cases, although correct as far as they go, are yet defective in many respects, as clinical studies, and I merely offer them for what they are worth. In the event of another severe case dropping into my hands, I should endeavour to keep a careful record of the examination of the urine, and it would also be interesting to try the effect of colchicum in the early or sthenic stage. The manner in which the disease singled out the small joints of the extremities was in all cases most marked."

In the same issue (p. 242), M. J. Collins, of the Peakdown Hospital, Claremont, Queensland, states in a letter, that during the past eighteen months he had treated five or six cases of bites from red-spotted spiders. Marked toxic symptoms occurred in all, and the patient suffered from severe pains in the limbs with slight paralysis, the feet remaining longest affected. Great depression with very tedious convalescence followed the abatement of the acute symptoms. One patient was insensible for some hours. Ammonia and brandy had been found useful in treatment.

In the August issue of the same journal (p. 341) Prof. Dr. Kobert, of the University of Dorpart (Baltic-Russia), who had been engaged for the last four years on a monograph on poisonous spider bites, contributes a letter asking for details of any further cases of poisonous spider bites in Australia for his biological notes on the spiders.

In 1894 (*Australasian Medical Gazette*, June, p. 190), L. D. Parry, of Murrumburrah, New South Wales, contributes "Notes of Three Cases of Spider Bite." The three cases all occurred in the month of March, but in different years, and in all the same part was affected, viz., the penis, the bites occurring in closets. In the first case there was much local swelling, whereas in the other two there was little or none. He gives the history of one case, which was similar to that of the other two. The patient had been bitten about 9 p.m., the feeling being more that of a burn than a sting. The pain remained local for some while, but very severe. It then extended to the groins on either side, and the back. Two hours after being bitten he felt pain, like pins and needles, in his toes, which increased and spread to his feet and ankles, and finally as high as his knees. There was also a feeling as of a belt of prickling and tingling around the lower part of the chest. The pain increased, accompanied by great restlessness. When seen by Dr. Parry eight hours after being bitten, he complained chiefly of the pain in his feet and legs, especially the toes. These parts were both in a cold perspiration. His temperature was subnormal and the heart's action somewhat weak. The pain continued with intermissions, probably caused by hypnotics, for forty-eight hours, and the perspiration gradually became general and very profuse. He returned to work on the fifth day though still feeling languid and tired, and for ten days afterwards complained of occasional darting pains in the legs and round the lower part of the chest. Red-spotted spiders were found beneath the seat of the closet used. As all Dr. Parry's cases occurred in March he suggests that possibly spiders are venomous only in the breeding season or when protecting their young.

In the July issue of the same Gazette (p. 242), a case is recorded from Whyenbah, Queensland. In March the man was bitten on the penis by a black spider with a red back. When seen three hours later he was in great pain and almost fainting, and complained that he was losing the use of his legs. His pulse was 112. An injection of strychnine was given, which seemed to produce considerable improvement.

In the same number (p. 244), W. R. Clay of Arncliffe, New South Wales, refers to having had a case in March, 1892, which exhibited symptoms exactly similar to those of Dr. Parry's case.

His Honor Mr. Justice Docker has informed me of a case on the Darling River, where a police-trooper was bitten on the testicles whilst in a closet. He suffered intense agony all night, and was unable to ride next day.

I am much indebted to Dr. R. H. Pulleine, of Adelaide, who has kindly given me the following notes on an experimental case of biting by this spider:—"The bite was on the back of the left hand, about one inch below the knuckle of the second finger and near

near the tendon. It was given at 5·15 p.m. on Monday, 22nd February, 1909. The spider hung on for thirty seconds, biting continually. The actual bite could not be felt; but almost immediately a small ache commenced at the seat of injury, increasing gradually in intensity until it reached a maximum by 7 p.m., when it began to improve, and disappeared by 5 p.m. on Tuesday, reappearing at intervals, however, until Saturday night, by which time nearly all traces of the poison had worked out of the system. Beads of perspiration accompanied the aching sensation, and stood on the skin around the bite until morning, after which the part perspired at intervals until Saturday night. The look and feel of the bite was that of a slight burn; there was some tenderness on pressure, slight stiffness of the finger joints in both hands, and slight aching in the bones of both arms and legs, and also at a spot at the top of the chest, just under the left armpit. This chest ache made its appearance twenty minutes after the bite, reached its maximum by 6·30 p.m., and disappeared finally by 10 p.m. A slight ache began in the bones of both legs at 12 a.m., accompanied by a profuse perspiration around the ankles. This continued until 9 a.m., by which time it had extended to the knees. A slight ache and perspiration began in the right hand at 8·30 a.m., but was normal by 9 a.m., after which this symptom recurred at intervals until Saturday night.

"Tuesday.—Slight persistent sweat on the thighs and hands, accompanied by a slight ache in the legs and hands, with stiffness in the fingers.

"Wednesday.—Slight persistent sweat on the loins and waist, profuse on the top of the forehead. Back of both hands always moist; both ached slightly.

"Thursday.—Slight perspiration in the small of the back. Free from all aching except in the neighbourhood of the bite, when it was exposed to a cold draught. Sweat on the back, slowly reaching to the shoulders. Back of both hands moist at bedtime.

"Friday.—On awaking found the skin dry, and also the clothing. The back of left hand became damp by 9 a.m. At noon the back of the right arm was perspiring freely opposite the biceps muscle. The back of the left hand was also damp. By bedtime both hands were damp.

"Saturday.—Awoke quite dry. Very slight sweat on the back of the left hand at intervals during the afternoon.

"Sunday.—No sweat, and very slight ache in leg bones.

"Monday.—As on Sunday.

"Tuesday.—No symptoms.

"*Remarks.*—The poison acts very powerfully on the sweat glands, and causes more or less aching in the limbs and chest. This aching was always accompanied by perspiration, except in the case of the chest. There was no swelling, but a slight stiffness in the fingers and slight redness around the bite, with a burnt look and feel in the skin. The appetite was unaffected. The temperature and action of the heart were normal throughout. There was a feeling of tiredness and want of energy, due, no doubt, to the aching of the leg bones. There was *no pain* during the experiment, and the various aches at the worst were not very trying. The continual flow of perspiration was most unpleasant, as it made the clothes damp and caused a feeling of chilliness. The *weight* was not affected."

In 1906, Dr. Frank Tidswell published "Researches on Australian Venoms" (Department of Public Health, New South Wales), in which he deals with the poison of the red-spotted spider.

After referring to some of the cases mentioned above, he summarises symptoms and signs as follows:—

"From the few accounts available the poison appears to be capable of causing pretty severe suffering. The most striking feature seems to be the rapid development of acute pains, especially in the lower limbs, but also in the abdomen and precordial region. These are accompanied or followed by tremors, paresis, or paralysis of the limbs. The patients are restless, delirious, or depressed and lethargic. Clammy perspiration, pallor, and syncopal symptoms indicate a tendency to collapse. The occurrence of jaundice is recorded. The acute illness is said to last three or four days, but it is noted that complete recovery may not occur till weeks after the bite. Various skin lesions, such as erythematous rashes, papules, vesicles, pustules, etc., may occur during the protracted convalescence."

He also records some experiments on a mouse and on rabbits, which animals living spiders had been allowed to bite. The mouse was very sick next day, but the following day was better, though it dragged its hind limbs. By the fifth day it was apparently well, except for a local lesion, which was followed by limited necrosis and ulceration. Seven rabbits all showed practically the same symptoms. In two or three hours the bitten part was swollen, œdematous and deeply congested; twenty-four hours later the œdema had disappeared. No tremors, paralysis or collapse were observed, and recovery seemed to be rapid and perfect. He adds that these results may be taken as indicating the improbability of a fatal issue from the poison of *Latrodectus hasseltii*.

Mr. W. W. Froggatt, Government Entomologist for New South Wales, has kindly given me a newspaper cutting of February, 1911, referring to a man at Goulburn who had been bitten by one of these spiders on the arm. He became unconscious on several occasions, and for some time his condition was very serious.

Dr. F. H. Cox, of Helensburgh, has given me the following notes of the case of a girl, 5½ years old, who died under circumstances suggestive, in his opinion, of her having been bitten by a snake, a red-backed spider, or a scorpion. The patient was a slight, weakly child. On 11th January, 1916, she was playing under the house, when she began

began to cry, and said she had pricked her arm. When seen less than half-an-hour afterwards, on the left forearm was found a small puncture surrounded by a reddened areola not over a quarter of an inch in diameter. The skin was cold, she was sweating profusely, the lips were blue, and the face pale. She was dried and put between blankets, surrounded with hot bottles and given strychnine hypodermically. The pulse was thready and very rapid, but regular. She was conscious, not in pain, and spoke connectedly; the pupils were fixed and contracted. The heart did not respond to remedies and she died within an hour. After death the puncture on the arm was still visible, surrounded by a small, pale, areola.

Order Scorpionida.—SCORPIONS.

In 1866 P. H. MacGillivray contributed two papers to the *Australian Medical Journal*, dealing with the supposed after-effects of bites from Scorpions. One of these (p. 97) is entitled "A Case of Death from Pyæmia following the Sting of a Scorpion." The patient was a boy of 10 years, who had been ill five days when seen by MacGillivray. After he had been bathing he complained of pain in his left ankle. When seen on the fifth day this was much swollen, red, and tender. It was followed on the seventh day by pain in the knee of the other side, and then in the right shoulder and arm; finally pleurisy and pericarditis developed and the patient died on the fifteenth day. When MacGillivray first saw the case he told the father that it looked as though the condition were due to the bite of a scorpion or other venomous insect. As a result, the parents searched the clothes of the boy, and found a scorpion on the inside of the left leg of the trouser. A post-mortem examination was held, and on the inner side of the left ankle a minute black point was noticed leading to an extravasation of decomposed blood and pus, the pus connecting with the joint. There was a diffuse abscess at the side of the tibia and the left knee contained pus. In addition, there was pericarditis and an abscess the size of a pea in the wall of the left ventricle; the right pleura was inflamed, and there were two ounces of pus in the left pleural cavity. The history of this case suggests acute infective periostitis. If the finding of the scorpion by the parents is to be relied upon as a fact, then it is quite possible that its sting may have been the means by which the responsible organism was introduced, the destruction of tissues produced by the venom enabling it to establish its hold.

Later on in the same Journal (p. 129) he records a case which he thinks may have also been due to the bite of a scorpion, though it seems unlikely that a scorpion could have bitten the victim on such a place as the lip. The patient, a man of 40 years, said himself that he had been bitten on the lip by some poisonous animal. During the next few days his behaviour made those who saw him think he was under the influence of drink, until he was found insensible. At the post-mortem examination a distinct puncture was found, about the size of a large pin, in the upper lip, leading to an abscess which contained about half a drachm of pus. There was a second puncture about half an inch away. The brain was congested and the lungs œdematous.

A. M. Lee (*Proceedings of the Royal Society of South Australia*, vol. 38, p. 477) exhibited at a meeting of the Society a large scorpion, 6¼ inches in length, from the Radium Mine in Flinders Range, which, as a result of its sting, had rendered a man unwell for several days.

Dr. Mjoberg, during his expedition in North-western Australia in 1911, was bitten on the back by a scorpion, which affected him for some hours afterwards.

Phylum Annulata.

Hirudinia.—At Mannum on the Murray River, South Australia, in November, 1913, I collected from man specimens of the leech *Limnobdella australis* = *Hirudo quinquestriata*. The specimens were kindly identified by the Australian Museum.

Dr. D'Ombrain, who is especially sensitive to the effects of insect bites or stings, informs me that he once received two bites on the ankle from ground leeches. Much swelling and irritation resulted, very similar to the effects of stings of certain ants upon him. Wounds were left like small eczematous ulcers "with sloughing non-healing bases." The inguinal glands became enlarged, and looked at one time as if they would break down. After six to eight weeks of much pain and discomfort a solution of mercury perchloride gradually healed the ulcers. Permanent stains resulted and some pitting as after smallpox, whilst the gland in the groin has remained enlarged to the present day.

Oligochæta.—In the *Australian Medical Journal* of 1865 (Vol. 10, p. 95) a case is mentioned in which three earthworms were taken from the ear of a boy of 10 or 11 on the Coliban diggings. They were supposed to have crawled in whilst he had been lying on the grass.

Phylum Cœlenterata.

Searcy in "Australian Tropics" (p. 265) refers to a youth of 17 who was bathing at Darwin when he suddenly gave a great cry and collapsed, and was taken out dead. His body was marked all over with red strokes, just as if a hot iron had been used to make the marks. A man who helped to lift the boy out had his own arms also marked in the same way. These stings usually occurred during the "south-easters." It was never ascertained exactly what animal was responsible, but it was presumed that it was some sort of jelly-fish.

The following are additional instances of irritation caused by the "Portuguese Man-o'-war," *Physalia pelagica*. Dr

Dr. F. Cox, of Helensburgh, informs me that a patient came in contact with the *Physalia* at 3 p.m. Smarting pain was felt at once, which lasted till 10 p.m. At 7 p.m. the part where the *Physalia* had come in contact with the leg was marked by a purplish-red colour somewhat like a measles rash, not disappearing with pressure, surrounded by a faint red erythema, which pressure removed. Next day the erythema had gone, but the site of the sting was still well marked and definitely raised above the surface and of the same colour. Four days later the outline could still be recognised, but was diminishing, whilst it was narrower and irregular.

In a letter from Dr. Devlin, of Manly, he tells me that the blue-bag, ammonia, storax, rubbing the affected area with sand and applying castor oil—all remedies that he had culled from various authors—seemed equally inefficient in treatment, and certainly did not curtail the period of suffering from the stings appreciably. In at least two of his cases—strangely enough, both athletes—collapse was so marked that it seemed as though a fatal issue was not impossible.

The lay Press, in referring to the experience of a surf-bather at Manly, who was stung by a "blue bottle" or "Portuguese man-o'-war," and who it was thought would have expired had not medical assistance been at hand, gives the following account of cases of severe stings :—

"The scientific names of the bluebottle, of which there are two species on our coast, are *Physalia utriculus* and *Physalia megalista*. It is fortunately very seldom that the victim of these bluebottles on our beaches has such a close call as Mr. F. had; but in Queensland there have been several deaths and a number of serious illnesses from their stings.

"In January, 1885, a boy named Keirnan was killed in five or six minutes. In November, 1911, a lad named Albert George, bathing in Pioneer Bay, Queensland, was stung on the chest and stomach and died in half an hour.

"In January, 1885, Mr. H. Moar, bathing at Cleveland, Moreton Bay, Queensland, suddenly felt a shock and experienced a sharp burning sensation on one arm, around which he noticed a long attenuated greyish-black slimy object, twined in serpentine manner nearly around it. One end was free and the other passed into the water. Mr. Moar detached it, and feeling sickness and great pain he left the water. He had not gone 30 feet from the door of the bathhouse before he had to cling on to the rails, as the pain was passing down his back and he felt that he was going fast. Mr. Rowney, who was near by, went to his assistance. The pain had now gone to his legs and he was perfectly helpless. He was placed on the ground and experienced a succession of shocks like the discharges of an electric battery, which caused agonising pain. He was carried to his residence, and at noon became a little better, but did not get well for some days.

"Mr. H. G. Stokes, bathing at Pialba (Q.), in 1885, was stung, and his experiences were as follows:—Firstly, sudden shock, then intense burning pain in the parts stung, such as produced by contact with a hot iron. Nausea and inclination to vomit, chattering of the teeth, shooting pains at the elbow, inability to use the affected arm, and general loss of power."

Here follows an account extracted from Dr. Bennett's experiences referred to in my first paper on this subject.

The newspaper cutting adds :—"The above facts have been mainly obtained from interesting papers by Mr. H. Tryon, of the Queensland Natural History Society, and Mr. Thomas Whitelegge, of Sydney. The latter has found by experiment that the only reliable antidotes are dry sand rubbed on the part stung, which removes the lasso threads, and the application of castor oil or salad oil. Vinegar, washing blue, washing soda, and fresh water are useless."

(*c*) DISEASES OF THE SKIN.

(J. B. Cleland.)

Australia, taken as a whole, must be considered relatively free from skin diseases of an infective nature. This result is partly due to the fact that the indigenous inhabitants had long been isolated from the rest of the world, were always much scattered over the country, and soon began to disappear before the advance of the white man. As the great bulk of the colonists have been the better-class of Europeans, it therefore followed that such infective skin diseases as have reached these shores are those occasionally found among the more cleanly white races.

It might be expected that the climatic conditions of parts of Australia—the dry heat of the interior, for instance—would exert some influence on the skin. This, perhaps, is seen in the Barcoo rot, and in pigmentations of the skin, and in a roughened, scabby appearance seen on the faces and forearms of old bushmen.

Taken altogether, the medical records of Australian diseases of the skin are obviously very imperfect, few, and scattered.

Mycotic Conditions of the Skin.

Occasional cases of *Ringworm* of the scalp or face are seen amongst children and sometimes in adults. Dr. Finch Noyes (*Australian Medical Journal*, Vol. 15, p. 222), in 1893, showed in Melbourne a case of ringworm of the scalp and nails in a girl of 15 years. Dr. H. C. Jee (*Australasian Medical Gazette*, July, 1884, p. 223) says that ringworm is common among the coloured people in Torres Straits. W. G. Stretton (*Transactions and Proceedings of the Royal Society, South Australia*, Vol. 17, pt. 2, p. 237, 1892-3) says that during

during the cold season the natives of the Gulf of Carpentaria are covered with ringworm. I am not aware that the species of ringworm causing these conditions have ever been identified in this continent.

Tinea versicolor is of frequent occurrence.

Only two cases of *Favus* seem to have been reported from Australia. One of these was reported by Dr. Finch Noyes. The patient was a Polish Jew. In 1904, Dr. Herbert N. Hewlett (*Inter. Medical Journal*, Vol. 9, p. 320) reported in Melbourne a case of favus in a girl of 13 of Continental Jewish extraction, but born in Victoria. I have myself (*Australasian Medical Gazette*, April, 1908, p. 180) reported the occurrence of favus in a mouse from Carnarvon, in Western Australia, and have seen mice from various country districts in New South Wales similarly affected.

Animal Parasites of the Skin.

Pediculosis of the head is very common in many parts of Australia, especially amongst children. Dr. A. G. Salter, of Brisbane (*Australasian Medical Gazette*, February, 1909, p. 80), attributes impetigo contagiosum to infection of the wounds caused by these insects. The body louse and the pubic louse also occur. The latter has been found in New South Wales causing a marginal blepharitis.

Occasional cases of *Scabies* are seen, and the disease is probably much commoner than is thought. Its earliest reported occurrence that I can find is for 1854, amongst the first shipment of Chinese after the Victorian gold discoveries (West Ford, *Australian Medical Journal*, 1868, p. 389). Dr. Thomas, in a discussion at Adelaide on native-pox, in reference to the Border Town smallpox outbreak, mentions "scabies as met with in this colony" (*Australasian Medical Gazette*, 1884, p. 65). In a series of 750 skin affections, Finch Noyes had 13 of scabies (*Intercolonial Medical Congress*, 1892, p. 196). Dr. Cumpston, in 1908 (*Australasian Medical Gazette*, September, p. 493) was the first to record a case of this nature in Western Australia. The patient was a school girl, and subsequently several further cases were unearthed in that State.

Other skin eruptions due to acarids are dealt with under the heading "Injuries and Diseases of Man in Australia attributable to Animals, &c."

Infective Conditions of the Skin of Bacterial or Unknown Origin.

Dr. Walter Speneer (*Australasian Medical Gazette*, June, 1899, p. 225; also communicated to the Royal Society of New South Wales, with plate) has described an outbreak of *Dermatitis exfoliativa neonatorum* in Sydney. This epidemic "was an infectious dermatitis of sudden onset with premonitory symptoms, showing special affinity for infants under three weeks old, but avoiding adults, was usually attended by constitutional disturbance, and presented a capriciously polymorphous eruption which underwent a rapid evolution, until it became lost in exfoliation more or less extensive. In cachectic subjects its evolution was arrested, as it proved rapidly fatal. Its longest duration was eight weeks." There were about thirty-one cases, chiefly in a "Lying-in Home," with a mortality of 20 per cent. An outbreak of measles and rubella was present at the same time. Two cases were born with the disease. The outbreak was at last controlled by closing the establishment, and thorough cleansing.

Two outbreaks of *Pemphigus* are recorded. Dr. James A. Reid, of Sale, in Victoria, in 1897 (*Intercolonial Medical Journal*, Vol. 2, p. 441), described an epidemic of pemphigoid and furuncular skin disease.

The Rev. Dr. Hunter Findlay (*Australasian Medical Gazette*, March, 1898, p. 114) describes *Pemphigus contagiosus tropicus* in Townsville, locally known as "native-pox."

In "Notes from North Queensland," Dr. R. A. O'Brien (*Australasian Medical Gazette*, March, 1908, p. 121) refers to the same disease.

Localised Abscesses.—Dr. H. S. Maw, of Tumbarumba, in April, 1911, in referring to a case of pustular dermatitis in a letter to us, mentions the frequency of localised abscesses on arms and legs during the last two or three years, and especially during 1911, in his district. He says they occur on the arms of labourers, and on the legs of children of the poorer classes, and he supposed were largely due to diet. He adds that it had been suggested that rabbiting produces or helps to produce this condition, nearly everybody in the district trapping the rabbits for skins and leaving the carcases to rot.

Lupus vulgaris.—This disease has always been considered an extremely rare one in Australia. A. W. Finch Noyes, junior (*Australian Medical Journal*, Vol. 13, 1891, p. 219), says: "From my limited experience I am inclined to infer that lupus vulgaris, though it may not be more rare in Australia than it is in England and the continent, is of a milder type. The few cases I have seen have been very limited in area, and without any special features to warrant their publication."

Herpes zoster.—In 1902 Walter Fowler, of Bendigo (*Intercolonial Medical Journal*, Vol. 7, p. 498), in a note, raises the question as to whether herpes zoster is a specific infective disease. Presumably from his experience in his practice, he refers to the fact that whenever a case of this disease crops up, you may be sure that during the next few weeks others will follow; then comes a pause, and it may be six months or two or three years during which one never sees a case.

VARIOUS SKIN DISEASES.

Eczematous Conditions.—Dr. J. E. Moffit (*Australasian Medical Gazette*, January, 1890, p. 104) says that a form of eczema is common at Broken Hill, but soon yields to arsenic and lead lotion.

Scleroderma.

Scleroderma.—J. H. Güntzer (*Medical Record,* July 24th, 1909, p. 129), in speaking of this disease, says that it is endemic in Russia, Austria, Eastern Prussia, and Central America. In all other countries, the cases are met with in the foreign born. He states that cases have been reported from Australia.

Keloid in Aboriginals.—Dr. Gardner (*Proc. S.A. Bch. of the B.M.A.,* 1880–3, p. 225) records a case of keloid on the chest and arms, with a large pendulous tumour from the lobe of the right ear following an injury, in an aboriginal.

In "Remarks on 750 Cases of Skin Disease," A. W. Finch Noyes, Junr. (*Intercol. Med. Congress of Australasia,* 1892, p. 190) gives an account of the prevalence of certain skin diseases in Melbourne, which may be briefly summarised as follows:—

Eczema contributed about 38 per cent. of the cases, which was about the proportion in which it occurred in America. As few children were included in the clinics, the percentage was considered as certainly high. Psoriasis gave an average of about 7 per cent., corresponding very closely with the figures for England and Scotland, but being much higher than the Vienna records. He had seen one case of herpes facialis, one case of herpes praeputialis, and sixteen of herpes zoster, giving a little over 2 per cent. for the latter, whereas in England the percentage was stated to be about 1·3 per cent. Of pemphigus six cases occurred, giving a high percentage as compared with other countries. There were thirty-one cases of impetigo contagiosa. Lichen ruberplanus seemed to be still rarer than in England and Europe; there were two cases of cheiro-pompholyx. There were three cases of erythema multiforme, and two of erythema iris. There were four cases of dermatitis herpetiformis, two of them corresponding with herpes gestationis. There were two cases of purpura.

The Effects of Sunlight and Climatic Exposure.

Dr. Ahearne (*A.M.G.*, August, 1890, p. 293), in a Presidential Address to the North Queensland Medical Society, says that freckles and brown patches on the skin are abundant in that part of Australia.

Along the seaboard of Australia erythema solare is common in children and adults who expose themselves in bathing and paddling. The sunburn may be severe, with considerable pain, and end in the formation of vesicles. The effects of a sea-breeze, even in parts protected by a shady hat, may be considerable—doubtless the air in motion evaporates the perspiration and thus enables the chemical rays to exert an influence.

It is a custom, in many parts, for surf-bathers to emerge from the sea and lie on the sand, taking a "sun-bath." The skin thus exposed soon assumes a dark-brown mahogany tint. Such persons, who are numerous, seem to suffer in no way as regards their general health, showing that the British races can soon protect themselves by pigment formation from the sun's rays, and that, even in warm climates, the exposure of a large part of the body to sunlight has not, as has been suggested, any baneful influence.

Possible "Sun Cancers."

Dr. Elkington (*A.M.G.*, 1912, p. 468, Meeting of Queensland Branch of the British Medical Association) mentions the frequency among those working in the bush of cases of what might be called "sun cancer," that is, cancer on parts exposed to the direct rays of the sun, suggesting analogy with X-ray cancer.

Sir Malcolm Morris and S. E. Dore (*Proc. Roy. Soc. Med.*, Vol. VI, No. 9, Sect. Dermat., p. 184, July, 1913) describe a case of Barcoo rot and epithelioma in a man who had been thirty years in Western Australia and had been much sunburnt. Eight years previously small warty growths appeared on the face and arms and ended in ulcers. Six of these tumours on the neck and face were excised and said to be rodent ulcers. X-rays, administered in Perth, had no effect. The patient also had scars of Barcoo rot, but he considered this complaint had no relation to the tumours.

(*d*) SCURVY.

(J. B. Cleland.)

Though the First Fleet, on its passage to Australia, escaped having cases of scurvy, thanks to the supplies of fresh provisions obtained at Teneriffe, Rio, and the Cape, this disease developed soon after its arrival. Governor Phillip, in his First Despatch to Lord Sydney (25th May, 1788, "Historical Records of Australia," series 1, vol. 1, p. 20), says that "the scurvy has, for some time, appeared amongst them, and now rages in an extraordinary manner." "The 'Supply' sailed to Lord Howe Island to endeavour to procure turtle in the hopes of checking the scurvy, with which most of the people are affected, and near two hundred rendered incapable of doing any work." (p. 32).

Collins ("An Account of the English Colony of New South Wales") also mentions the scurvy breaking out "which, aided by dysentery, began to fill the hospital, and several died." In April, 1788, a "great number of scorbutic patients were daily seen creeping to and from the hospital tent."

The "Surprise" transport arrived on 25th June, 1790. She had 100 on the sick list on arrival, 42 having died on the voyage. On the 28th June the "Neptune" and "Scarborough" transports arrived, 200 sick being landed from the different transports, many of whom were labouring under the complicated diseases of scurvy and dysentery.

The

The numbers who died on board each ship during the voyage were—the "Lady Juliana," five women and two children; the "Surprise," forty-two men; the "Scarborough," sixty-eight men; the "Neptune," one hundred and fifty-one men, eleven women, and two children. On the last day of June there were 349 sick in the settlement (Collins, pp. 89-91).

Dr. G. T. Hankins, in a Presidential Address before the New South Wales Branch of the British Medical Association in 1891 (*Australasian Medical Gazette*, April, p. 187), thus describes the condition of Sydney after the arrival of these transports:—

> "The west side of the cove afforded a scene truly distressing and miserable. Upwards of fifty tents were pitched in front of the hospital (the portable one being not yet put up), all of which as well as the hospital and adjacent huts were filled with people, many of whom were labouring under the complicated diseases of scurvy and dysentery, and others in the last stage of either of those terrible disorders or yielding to the attacks of infectious fever. The appearance of those who did not require medical assistance was lean and emaciated. Several of these miserable people died in the boats as they were rowing on shore, or on the wharf as they were being lifted out of the boats, both the living and the dead exhibiting spectacles more horrid than had ever before been witnessed in this country. All was to be attributed to confinement, and that of the worst species—confinement in a small space and in irons, not put on singly but many of them chained together. On board the ships the masters, who had the entire direction of the prisoners, never suffered them to be at large on the deck, and but few at a time were permitted there. This consequently gave birth to many diseases. It was said that on board the "Neptune" many died in irons; and what added to the horror of such a circumstance was that their deaths were concealed, for the purpose of sharing their allowance of provisions, until chance and the offensiveness of a corpse directed the surgeon or some one in authority on the ship to the spot where it lay. All possible expedition was used to get the sick on shore, for even whilst they remained on board many died. The bodies of the dead were taken over to the North Shore and there interred. Parties were immediately sent into the woods to collect the acid berry of the country (*Leptomeria acida*), which, "from its extreme acetosity was deemed by the surgeons a most powerful anti-scorbutic."

During the next few years references to scurvy are common in connection with the arrival of convict vessels. Thus in 1795-6, in the trial for conspiracy in connection with the "Marquis Cornwallis," one witness stated that he had had scurvy on board (*Hist. Rec. of Aust.*, series 1, vol. 1, p. 654), and in 1797 some of the convicts on the "Ganges," arriving on 2nd June, were highly scorbutic, whilst several convicts on the "Britannia" died from scurvy (*loc. cit.*, series 1, vol. 2, pp. 32, 62).

In 1801 "the greater part of these (*i.e.*, the convicts) landed were very much affected with scurvy" (*loc. cit.*, series 1, vol. III, p. 115), whilst seventy convicts died from scurvy on the "Atlas" Transport (*Surgeon Jamison to Hobart, loc. cit*, p. 705).

In 1801 scurvy also appeared on the "Geographe" of Baudin's Expedition when on the north-west coast of Australia. When Baudin arrived at Port Jackson on 22nd June, 1802, he had only twelve men to work the ship, all the rest being in the last stages of scurvy. The "Geographe" and the "Naturaliste" had lost forty-seven men since leaving France (*Hist. Rec. of Aust.*, series 1, vol. III, p. 697).

Slight scurvy had occurred on H.M.S. "Glatton," arriving at Port Jackson with convicts on 11th March, 1803, and a few cases on the "Rolla" Transport, arriving 13th May, 1803 (*loc.-cit.*, vol. IV, pp. 248, 301.) Captain Flinders contracted scorbutic ulcers on his legs during his voyage round Australia in 1803 (*Flinders' Discoveries*, vol. II, p. 76), whilst scurvy also occurred amongst the members of the first settlement at Port Phillip in 1803 (*Bonwick's Port Phillip Settlement*, p. 74).

Scurvy has claimed a heavy toll in Australian Exploring Expeditions, the most disastrous of which was that of Burke and Wills. Hirsch (*Geogr. and Hist. Path.*, vol. II, p. 528) says as follows:—"The continent of Australia is notorious for the severe epidemics which have broken out time after time among the exploring parties in the interior. Pechey (*Med. Times and Gazette*, 1867, November, p. 509) mentions the disease as occurring endemically, mostly among the shepherds on the Darling Downs, in the north-west of New South Wales. In Tasmania it is not met with as an epidemic (Hall, *Trans. of Epidem. Soc.*, 1865, ii, 85)."

In October, 1819, several of King's crew were attacked with scurvy at Port Warrender, north-west Australia (*King's Survey of Inter-trop. Parts of Australia*, vol. 1, p. 325).

In 1823, Oxley and some of his men were badly affected with scurvy on their return from their expedition to Port Curtis, Moreton Bay and Port Bowen (Barron Field's *Geogr. Memoirs in New South Wales*, 1825, p. 84.) In the same year forty cases of scurvy were landed at Sydney Hospital from the ship "Ocean" (*Watson's Hist. of Sydney Hosp.*, p. 60.) Scurvy soon appeared at the Melville Island Settlement in 1824, and at Raffles Bay in 1827 (Wilson, p. 149).

In 1832, Major Mitchell (*Three Exped's.*, vol. 1, p. 281) had some of his men affected near the Darling, whilst later one of the men became very ill from "black scurvy," all his teeth dropping out; he had brought it with him from "an ironed gang," where it had been prevalent some time before (p. 316).

In 1841 some of the men of Major O'Halloran's Expedition against the blacks on the Murray contracted scurvy (*Bull's Early Recollects. and Exps. of Colonial Life*, p. 169).

In March, 1845, in Central Australia, Captain Sturt (*Narr. of an Exped. into Central Aust.*, vol. 1, p. 306), thus describes his own symptoms, and those of Mr. Poole, in whom the disease was fatal:—

"About the beginning of March . . . . I had violent headaches, unusual pains in my joints and a coppery taste in my mouth. These symptoms I attributed to having slept so frequently on the hard ground in the beds of creeks, and it was only when my mouth became sore and my gums spongy that I felt it necessary to trouble Mr. Brown (the surgeon of the Expedition), who at once told me I was labouring under an attack of scurvy, and I regretted to learn from him that both he and Mr. Poole were similarly affected. . . . Of we three Mr. Poole suffered most and gradually declined in health."

The officers of the Expedition alone suffered from the scurvy, the men escaping. This was attributed to the long, arduous expeditions that the officers undertook to investigate the surrounding country, which necessitated their living on bacon while away from the camp, while the men in the camp had fresh mutton. Those men who went on one such sub-expedition would not be taken on another until after a lapse of some time, and they thus had time to recover any loss of health due to the deprivation of fresh food, while the officers themselves had not these opportunities. This attack of scurvy occurred while the Expedition were in their long camp at the Depôt in the Grey Range of hills north of the Barrier Range.

"On the 25th April Mr. Poole's muscles were attacked and he was suffering great pain. By the end of April Mr. Poole had gradually become worse and worse, and was now wholly confined to his bed unable to stir. On the 10th of May Mr. Poole was still worse, all his skin along the muscles turned black and large pieces of spongy flesh hung from the roof of his mouth, which was in such as state that he could hardly eat. . . . On the 16th of July Mr. Poole died suddenly; he had shown immediately previous no indication of approaching death, in fact had sat up to take some medicine when he suddenly fell back and expired without a struggle." From the clear fairness of his countenance after death, Mr. Brown attributed the fatal result to internal hæmorrhage.

Later, Captain Sturt was again attacked with scurvy on his trip to Cooper's Creek. "I was myself laid up, a helpless being, for I had gradually sunk under the attack of scurvy which had so long hung upon me. The day after I arrived in camp I was unable to walk, in a day or two more my muscles became rigid, my limbs contracted, and I was unable to stir. Gradually also my skin blackened, the least movement put me to torture, and I was reduced to a state of perfect prostration." (Vol. II, p. 100.)

In 1856, at a camp on the Victoria River, Northern Australia, A. C. Gregory notes that one seaman died and others were disabled by scurvy and dysentery.

In 1860 at Fisher's Creek, north of the centre of Australia, Stuart was attacked by scurvy (Favene, *Hist. of Aust. Explorat.*, p. 206), and again in 1862 on his return from the Gulf of Carpentaria, when he became blind at night (Howitt, *History of Discoveries in Australia*, II, p. 184.) Scurvy also occurred amongst F. Walker's Expedition on the Burdekin in 1862, on the search for Burke and Wills.

Dr. S. D. Bird (*Australian Medical Journal*, 1862, vol. 7, p. 172) thus refers to the disastrous exploring expedition of Burke and Wills in an article on "Scurvy, and particularly its Prevalence in the Allied Armies during the late War with Russia":—"The death of the unfortunate explorers, Burke and Wills, was no doubt due to scurvy caused by living for such a time on flour, dried meat, and latterly on 'Nardoo' meal. The descriptions we read in their diaries of the 'indescribable leg-bound feeling,' the shortness of breath, and exertion required to get up a slight piece of raised ground, the sensation of pain and helplessness, and the clearness of vision to the last are very characteristic."

In 1868 considerable discussion took place in Victoria as to the nature of the disease which had recently arrived by the ship "Dayspring" (*Australian Medical Journal*, vol. 13, pp. 323, 339, 364, 389.) This disease has already been dealt with under "Beri Beri" in the Third Report of the Government Bureau of Microbiology (p. 235.) From the descriptions of the cases it seems clear that some of the patients, especially the Chinamen, suffered from beri beri, but that cases of scurvy also occurred amongst some of the passengers and several of the crew. A South Sea Islander, for instance, is described as having dark hæmorrhagic spots on the legs but without fœtor of breath or spongy gums.

In 1873, at Waterloo Wells, one of Warburton's camel-men became ill with scurvy (Warburton's *Journal*, 23rd June, 1873):—"Sahleh, one of the camel-men, was now very ill with scurvy." July 4th, 5th, and 6th—"Sahleh has been nearly dead; he has lost the use of both of his legs and arms; cannot move . . . He is utterly powerless." July 8th—"Sahleh looks worse; he is in a critical state, and must either mend or die." 9th and 10th—"Sahleh is certainly better; we have discovered a small yellow berry in the scrub, which, after proving it not to be poisonous, we have made him eat."

In 1894 an editorial appeared in the *Australasian Medical Gazette* (February, p. 61) on Bush Scurvy. It appears that lately a number of cases had been brought under the notice of the *Gazette*, which admitted of no doubt as to the occurrence of scurvy in the bush. This was to be attributed to the use of salt meat, damper and tea decoction, and the

the total absence of fresh meat, vegetables, or fruit. It is added that the disease might not exist in a very alarming state in Australia, though sporadic cases undoubtedly occur The value of the Chinese market gardener in country towns was emphasised.

In 1901, W. Macansh (*Australasian Medical Gazette*, April, p. 144) describes a case of scurvy in a boundary-rider, aged twenty-three years, who came from the Riverina. There were weakness and pains in the legs, occasional deafness, general malaise, and shortness of breath. On his legs were innumerable petechial spots, and on the lower third of each leg two large ulcers. Although the patient affirmed that he had not been living a rough life and had had plenty of fresh rations, antiscorbutic treatment soon relieved his condition.

Reference is not made in this account of scurvy to the condition seen occasionally in infants as a result of being fed on sterilised foods; as in other parts of the world, such cases occur in Australia from time to time.

[13 Diagrams; 21 pages Photos.]

Sydney: William Applegate Gullick, Government Printer.—1916.

69685—X

UNIVERSITY OF ILLINOIS-URBANA
3 0112 111046915